TECHNOLOGY DEPT.

FOURTH CHICAGO SHOW ISSUE

A National Newspaper for Every Branch of the Industry

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

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First Copy

Chicago Show Sales Pass 300 Mark; Attendance 60,000 in First 3 Days

C. A. T. A. Proposes Dealers Diversify Lines to Include All Automotive By-Products

Sane Methods for Handling Used Car Sales Also Paramount Need; Servicing Departments Need Pushing

Chicago, Jan. 31.—"We believe in the automobile industry. We believe there is now more opportunity for profit to the intelligent merchant than in any other merchandising activity."

With these statements as the introduction and keynote, the Chicago Automobile Trade Association in a special pamphlet just issued proceeds to outline the fundamentals that characterize "the intelligent merchant."

The booklet, being distributed at the Chicago National Automobile Show, where the association maintains a booth, is the product of one of the oldest and largest organizations of its kind in the country.

"We advocate that dealers give attention to the broader aspects of the business and that a policy be adopted of greater co-operation between dealers, between dealers and distributors and between dealers and factories. We urge a better under-

(Continued on Page 2)

2,500 AT CHRYSLER DEALER GATHERING

Chicago, Ill., Jan. 31.—Walter P. Chrysler's brilliant party at the Naval Armory drew a packed auditorium of 2,500 Chrysler, De Soto and Dodge dealers from many states last night, and proved an occasion for plenty of enthusiasm. Starting with a banquet, the program was officially opened when Mr. Chrysler mounted the platform and delivered a message to the selling forces. Then followed an elaborate floor show of fourteen acts as the wind-up of the evening.

W. P. Chrysler

"A lot of cars are going to be scrapped in 1933, and can be started on their way fast by the right kind of selling approach," stated Mr. Chrysler. "It all depends on whether the sales forces do as good a job as the engineers. It is naturally a source of gratification to us that in 1932 our dealers got a larger percentage of the total retail business

(Continued on Page 2)

GAMBILL ENCOURAGED BY HUPP RECEPTION

Chicago, Jan. 31.—Sales at the automobile show are exceeding expectations, according to Charles E. Gambill of the Gambill Motor Company, who sold seven Hupmobiles during the first two hours of the show. "Our biggest seller so far," said Mr. Gambill, "is our new big Series 321, which is mounted on a 121-inch wheelbase and has a 90 horsepower engine.

C. E. Gambill

"We find this year that people are asking for roominess and leg room in the car body. They want space for three good big husky men in the rear seat, and this accounts

(Continued on Page 5)

UNITED MOTOR SERVICE HOLDS SHOW MEETING

Chicago, Jan. 31.—More than 500 assembled for the luncheon of United Motor Service at the Palmer House Tuesday noon. F. A. Oberheu, president and general manager, was the chef speaker. He welcomed the distributors and dealers, who for the most part made up the guests, and who hailed from Midwestern territory.

In addition to H. J. Garnette, manager of the Chicago branch, a number of other branch managers were present, including Messrs. Johnson of San Francisco, Hall of Indianapolis, Bodine of Cincinnati, King of Omaha, Nichols of Kansas City, Wall of St. Louis, Lally of Des Moines and Rutherford of Minneapolis.

Decorations were quite the most unusual of any banquet or luncheon

(Continued on Page 5)

Booth Contests Prove Popular Among Women Attending Show

REEVES REPORTS HEAVY INCREASE IN SHOW ATTENDANCE

New York, Jan. 31.—The following telegram was received by Automotive Daily News this morning from Alfred Reeves, vice-president of the National Automobile Chamber of Commance and manager of the Chicago National Automobile Show now in progress at the Coliseum in Chicago:

Alfred Reeves

"Sent wires to all our motor executives last night that the attendance at Chicago Automobile Show opening day was 12 per cent.

(Continued on Page 5)

FAULKNER DECLARES SALES DIVISIONS LAG

Chicago, Jan. 31.—Members of the National Automobile Dealers' Association assembled at the Medinah Athletic Club for the second session of their annual convention today and heard a variety of topics discussed by authorities in the industry.

In addition to Roy Faulkner, president of the Pierce-Arrow Sales Company, and J. W. Tarbill, Packard distributor at Cincinnati, O.; Dayton, O., and Indianapolis and also Studebaker distributor at Indianapolis, two Chicago men, Charles

(Continued on Page 9)

WHERE TO GET AUTOMOTIVE DAILY NEWS DURING THE SHOW

Show issues of Automotive Daily News are available free to all trade visitors at the Chicago Show at hotel newsstands, in the Press Room at the Coliseum, at your own booth or dealer meeting, or at 333 North Michigan Ave., telephone Andover 2400.

Accessory, Parts and Show Equipment Displays in The Gallery at the Coliseum Get Big Play From Trade and Public

By Walter Bermingham

Chicago, Ill., Jan. 31.—With sales mounting to a high degree and the attendance in excess of the most sanguine expectations of the show management, the Thirty-third National Chicago Automobile Show at the Coliseum bids fair to speed up factory productions and to give the trade a substantial start on early spring business. It was reported by the Chicago Automobile Trade Association that up to Monday night more than 300 cars had been sold at retail.

While accurate figures on attendance at the three opening days are not available, Al. Reeves, vice-president of the National Automobile Chamber of Commerce, and manager of the show, estimated that close to 60,000 persons passed through the gates. The Monday crowd was augmented by the arrival of dealers from many sections, and there was a liberal sprinkling of prospective buyers from out of the city who took advantage of the low railroad rates offered by all lines entering Chicago.

Factory executives are pleased with the turnouts, and believe that records in sales will be tabulated before the close Saturday evening. While the low-priced cars are drawing the most patronage, reports in-

(Continued on Page 8)

600 DEALERS HEAR WILLYS AT MEETING

Chicago, Jan. 31.—At the rate that 1933 Willys sales have started off they should exceed last year by more than 300 per cent, when the final returns are in. This was the cheering message from John N. Willys, chairman of the board of Willys-

(Continued on Page 5)

AUTOMOTIVE EXPORTS INCREASE 15% IN DEC.

Washington, Jan. 31.—Export value of all automotive products gained 15 per cent, during December as compared to November, amounting to $5,508,108, as against the $4,782,409 for the preceding month, a gain of $725,799, according to the automotive division of the Department of Commerce. Exports for December, 1931, amounted to $8,916,000.

Shipments of both passenger cars

(Continued on Page 5)

SPRINGFIELD OPENS SHOW, ATTENDANCE UP

Springfield, Mass., Jan. 31.—The Springfield Automotive Dealers Association opened its eighteenth annual automobile show, which will continue throughout the week, closing next Saturday night, with a record first night attendance.

Harry W. Stacy, secretary, who has directed all the shows put on by the association, is managing this exhibit under the direction of the show com-

(Continued on Page 5)

GENERAL MOTORS HOST TO ART TEACHERS

Chicago, Jan. 31.—General Motors is host to teachers of the arts and crafts in Chicago and their classes at the exhibition in the Hotel Stevens.

Mural Marquetries form an important element in the scheme of

(Continued on Page 5)

FEDERAL GAS TAX DOOMED IN SENATE

Washington, Jan. 31.—The resolution continuing the 1 cent Federal gasoline tax, which expires June 30, although certain of passage in the House, is doomed to defeat in the Senate, it was indicated today.

Doubt was expressed today that

(Continued on Page 9)

FOR SHOW VISITORS—Automotive Daily News Editorial and Advertising Offices in Chicago: 333 North Michigan Ave., Telephone Andover 2400

The above picture shows a general view of the General Motors exhibit at the Hotel Stevens. If anyone thinks interest in automobiles is waning let him study the faces of prospects in this picture.
Photo by Kaufmann and Fabry.

Chicago A. T. A. Proposes Diversification of Lines

(Continued from Page 1)

standing of, and more attention to, legal and legislative affairs."

The code for the successful dealer, in the words of the C. A. T. A., should be based upon the following procedures:

"1. That dealers must expand their business to embrace all by-products of the industry and must set up their establishments to include ample facilities to do so efficiently. Margins of profit in the new car business alone are not sufficient to cover needs, and the dealer, to maintain his establishment and make the proper profit, must include every automotive item for which there is a profitable market.

"2. That used cars must be handled sanely. They must be accepted in trade as a part of the cash taken in payment for the new car sold. They must be considered at their market selling price, less cost of reconditioning. Any other view is unsound.

"Used cars must not be sold in 'as is' condition unless they are so good that they will give service commensurate with the price charged. A mutually beneficial deal between customer and dealer is the only kind of transaction upon which to base a permanent business. A used car 'bought' which will not measure up to this standard should be junked and taken in by the dealer upon this basis. The National Used Car Market Report service will assist in this work. We supply this report to our members.

"3. That the significance of the term 'service' is frequently given too little consideration by the dealer. This is a serious matter. Service is not just doing that which is put before you to do. To be appreciated by the customer and to be successful it must include the anticipation of other needs, either to the car itself or in the matter of advising the one who pays the bill how most effectively to extend his money. This treatment of service will greatly increase patronage and profit. The facilities of this department, both in personnel training and physical equipment, are extremely important.

"4. That the accounting and the keeping of records of your business must be accurate to present promptly all the essential facts at least once a month. With the facts known to the proprietor and the manager, policies may be adjusted intelligently to meet the situation. Without facts, one can hardly expect properly to guide the business.

"5. That the general subject of financing motor vehicles is of major importance to the entire trade. Installment selling of automobiles has grown to enormous proportions and repossessions of such vehicles has developed a situation needing careful thought. Financing and repossessing motor vehicles should be worked out to the greatest advantage of the dealer, having constantly in mind the situation of the finance company which provides the cash."

TUMBLER LABORATORIES PLAN CANADIAN PLANT

Toronto, Canada, Jan. 31 (UTPS).—J. A. Tumbler Laboratories of Baltimore, Md., manufacturers of polishes, waxes and dressings for automobile use, have decided to open a Canadania factory at New Toronto, and announce that they will divert from the Baltimore plant and handle from Toronto all shipments to Britain, South Africa, Australia, New Zealand, India, Cuba, the Argentine, the Philippines, Porto Rico and other countries.

2,500 AT CHRYSLER DEALER GATHERING

(Continued from Page 1)

than in any year in the history of our organization. Salesmen today must know both their own and competing cars, and they must be able to translate mechanical advantages into language that is clear to the layman. They need also to dramatize their product.

"Dealers today have to operate intelligently because a stiff sales fight is on. As I view things there is a bigger opportunity before us today than you or I have ever had or will have again. We should never overlook the fact that people need automobiles and cannot do without them. They may be cautious now but that state of mind can't last forever. Just now conditions call for better selling with new methods and technique.

Numerous civics and business leaders of Chicago including Mayor A. J. Cermak were guests of Mr. Chrysler. In addition, the chief executives of the various Chrysler units were present with their staffs headed by B. E. Hutchinson, chairman of the board, and Harry B. Moock, general sales manager of Plymouth; Byron C. Foy, president, and Roy G. Peed, general sales manager of De Soto; K. T. Keller, president, and A. vanDerZee, general sales manager of Dodge, and J. E. Fields, president, and J. W. Frazer, general sales manager of Chrysler sales. They met their dealers at tables which in reality were smaller and more intimate parties within the main celebration.

HUDSON PLANT TO CLOSE THIS WEEK

Detroit, Jan. 31—Officials of the Hudson Motor Car Company announced today that their plants here would be closed this week. They emphasized, however, that the shutdown had no relation to the strike at the plants of the Briggs Manufacturing Company.

The policy of the company, officials said, is to permit sufficient orders to accumulate to keep the factory in operation for several weeks and then go into production.

SPARKS *from* THE SHOW

Dealer Meeting Flourish.

* * *

Grant Sees Sales Gain.

* * *

A Slip of the Tongue.

* * *

O. K. Jedge.

* * *

In the Trade.

* * *

Avast Jamesy.

* * *

Chris Sinsabaugh—Detroit Editor

THE fireworks in the way of dealer meetings, naturally accompanied with food, came Monday when B-O-P drew from all points in the United States for its luncheon at the Palmer House, while the same evening the Chrysler Corporation rallied to its allied banners—Chrysler, Dodge, and De Soto—all within hail of the dinner horn. Possibly no one day in show history ever brought together so many dealers as did B-O-P and Chrysler.

* * *

I HEARD R. H. GRANT, head of B-O-P and a vice-president of General Motors, speak twice at Detroit last Wednesday, and in the main his talk at the Palmer House was along about the same lines—a discussion of conditions and an outlining of B-O-P policy. However, in the Chicago address Mr. Grant became specific when he estimated the selling possibilities of 1933. Whereas at Detroit he contented himself with a statement that he looked for an increase in buying. At Chicago he declared "there appears to be the possibility that 150,000 or 200,000 more new cars will be sold in 1933 than there were last year," and this estimate was based on the exhaustion of inventories which will force necessity buying.

* * *

THE CHRYSLER PARTY was so unwieldly as to numbers that it required the holding of the affair at the Naval Armory, just off our weather bow on the lake front—an evening which was all entertainment save for the serious talk Walter P. gave his dealers. The program, in keeping with the place in which the show was held, was naval in spots but highly enjoyable to us who came from the sticks.

Our only criticism was that the master of ceremonies hadn't learned his automobile A. B. C.'s and startled us by referring to Chrysler, Pontiac and Dodge cars in his talk, a slip which he tried to cover in a few well chosen words. But his face certainly was red. The show, however, proved to us that all work and no play makes Jack a dull boy.

* * *

IN BETWEEN the luncheon and the banquet the conductor had other work to do. He was one of the judges in the show contest to select the oldest car that could move under its own power. It was a show feature and there were 200 or more who entered jaloppis that must have come out of the ark with Adam. We judges only had to pass on five of them—two Duryeas, an Oldsmobile, Orient and a Stanley Steamer. The judges' decision gave first prize to Glade Ralihan of Kendallville, Ind., who had a three-cylinder Duryea, water cooled, but I still feel in my bones that Earl Brander's Duryea, which was air cooled and had high buggy wheels, was the older. We tried looking at the teeth, but couldn't find any, so I waived my minority claims and voted with the other for Ralihan.

Brander runs a garage in Rockford, Ill., and he told me that he had an offer of $2,000 for his Duryea from L. E. Phillips, a wealthy oil man at Bartelsville, Okla., whose fad is collecting old vehicles and who had a chance recently to ride in the Duryea.

* * *

I GOT A PEEP into the future browsing around the Stevens when I dropped in at the headquarters of the Globe Machine and Stamping Company of Cleveland. Globe specializes in grilles for radiators, and among its customers are Chrysler, Plymouth, Dodge and Continental. L. B. Green, works manager, and L. M. Payne, Detroit representative, hold forth at the Stevens and are showing engineers what's what in grilles. Green and Payne showed me something that is coming, a utility grille which is a shutter combination. For the first time a grille is something else than ornamental, the new type being decidedly practical because of the inclusion of the shutter, located in the center of the grills, which is of unusual lines but decidedly practical looking.

* * *

ANOTHER CONTACT was with Andy Reynolds of the U. S. Advertising Company of Toledo, handling the Monroe shock absorber account, told me a recent shipment his client made to the Volvo Motor Company of Gothenburg, Sweden, the only automobile manufacturer in that far

(Continued on Page 8)

CHICAGO SHOW
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AUTOMOBILE COMPANY
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"That's the Starter" By Bishop

COURTESY ST. LOUIS STAR AND TIMES

GEORGIA HOUSE VOTES TO HALVE LICENSE FEE

Atlanta, Ga., Jan. 31 (UTPS).—Gov. Eugene Talmadge's pet piece of legislation, the $3 license fee meausre, passed the Georgia House of Representatives today by a vote of 123 to 71, but in modified form.

The bill, as passed, places a license fee of $3 a year on all passenger automobiles under 2,800 pounds in weight. On automobiles more than 2,800 pounds in weight, the fee will be at the rate of 25 cents per 100 pounds. This means that a car weighing 3,000 pounds would pay a license fee of $7.50; one weighing 4,000 pounds $10 and one weighing 5,000 pounds $12.50.

The new fees amount to about half of what license fees cost at present. The measure must, of course, now be passed by the state Senate to become legal, but it is expected this will take place in the next few weeks.

GILBERT TO REPRESENT CONTINENTAL MOTORS

Omaha, Neb., Jan. 31.—Norman O. Gilbert has been appointed Continental Motor Company district manager for the Omaha territory and has taken temporary quarters at the Logan Hotel.

DILL APPOINTED JUDGE

Trenton, N. J., Jan. 31.—Former Motor Vehicle Commissioner William L. Dill of Paterson has been named by Gov. Moore to the Court of Errors and Appeals, as successor to Judge James Kerney, Trenton publisher.

ILLINOIS ROAD USERS FIGHT TAX INCREASE

Chicago, Jan. 31.—The Illinois division of the National Highway Users' Conference, of which Alfred P. Sloan, Jr., president of General Motors, is chairman, are organized to fight the rising menace of taxation which is causing a decrease in new car sales, crippling the manufacturers, adding to unemployment and prolonging the present business depression.

Chester G. Moore, director of the Illinois division, in attendance at the automobile show today, stated the new organization is making marked progress. A state-wide call issued in December attracted 110 persons, representing thirty-one groups and twenty-four industries.

"Such an organization as the Highway Users' Conference is necessary to combat the rising tide of taxation which is engulfing all motorists as well as the automotive and kindred industries," said Mr. Moore.

ARKANSAS SLASHES CAR LICENCE 50 CENTS

Little Rock, Ark., Jan. 31. — The state of Arkansas plans to reduce its license fees for passenger automobiles 50 per cent., with a 75 per cent. reduction for cars four years old or more.

Action on the motor vehicle tax reduction was completed in the Legislature several days ago except for a formality to be performed by the House this week.

The slash in license fees, in the opinion of Gov. Futrell, will permit operation of more automobiles. An anticipated increase in the state gasoline tax receipts will offset the decline in revenue brought about by the reduction, he stated.

IOWA DEALERS TO HOLD ANNUAL MEETING FEB. 28

Des Moines, Ia., Jan. 31.—Plans are being completed for the annual meeting of the Iowa Automotive Merchants Association, which is scheduled for this city on February 28. An interesting program has been laid out and a full attendance is expected.

This meeting will be held during the continuance of the Des Moines Automobile Show and Exposition, which runs from February 27 to March 4, inclusive.

The Iowa Automotive Merchants Association has a very elaborate legislative campaign mapped out, and progress is being made for the adoption of many of the association's contentions by the Legislature. About ten amendments to present laws are being urged, and several other changes have the association's approval.

CANTON, OHIO, DEALERS RE-ELECT SCHUMACHER

Canton, O., Jan. 31.—R. L. Schumacher, head of the Reo Motor Sales Company, was re-elected president of the Canton Automobile Dealers' Association at the recent annual meeting.

George Maloney of the Maloney-Zwick Motor Company, was re-elected vice-president, and William G. Aman of the W. G. Aman Company, Ford distributors, was named treasurer. Phil V. Oby is secretary of the organization.

CAR BODY BUILDING SPURS LUMBER TRADE

Chicago, Jan. 31.—Sawmill operators are watching with much interest the outcome of the Chicago automobile show, it was stated in lumber circles here today. Wholesalers were encouraged by the sales reports from the New York exposition.

They report more inquiry from automobile plants, with the automobile body interests taking heavier shipments from the mills on old orders, particularly in the South, and the movement is mostly oak and gum. In the North one of the leading upper Michigan operators is cutting a tract of timber and sawing on contract for a large body plant, and in the last week a large order was placed for 200,000 feet of low grade hardwoods wanted for crating purposes by one of the automobile factories. This improvement in volume has developed since the middle of the month.

A report from Memphis is that for the first time in more than a year a full crew is being employed by the local plant of the Fisher Body Corporation. It is reported that more than 1,500 employees are now at work because of large orders for bodies. There were other scattering reports of a speeding up in automobile production.

The automobile interests are among the largest consumers of lumber and other forest products and activity in that industry creates an active market for both hardwoods and softwoods.

—Austin—

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- Delivered Cost approximately 50% less than nearest competitor.

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Factory: Butler, Pennsylvania

For greater convenience

NO GETTING away from it, those heroic little valve cores *must* be protected if they are to fulfill their promise faithfully. Valve caps are an air-sealing aid. Dust caps afford further protection to both valve core and valve cap.

Admittedly, their unscrewing and replacing does consume time. The Schrader Dublchek was designed to save that time. It eliminates dust and dirt. And is the equivalent of an *extra valve*. It affords a great incentive to the motorist to keep his tires inflated to the correct pressure—and thus obtain the utmost tire mileage for his money.

With a pair of pliers, affix a set of Schrader Dublcheks, *permanently*, to your tire-valve stems—and make inflating and air-gauging your tires as easy as turning on a water tap.

Nothing to unscrew! Nothing to replace! Simply snap on the air-chuck and the air shoots in—right through the Dublchek. Gauge air pressure the same way. Guaranteed air-tight under as much as 250 pounds pressure — even should valve core become damaged. And Dublcheks are mighty hard to lose or mislay.

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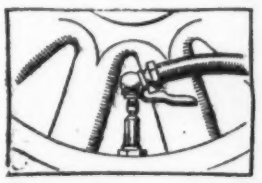
Schrader Dublcheks are comparatively new to the motoring public. There's a wide market before you—and one which will respond readily to Dublchek's appeal. Reasonably priced. Easy to sell. Profitable to handle. And the name "Schrader" is a guarantee of their efficiency and quality. Get in touch with your regular source of supply. Made by A. Schrader's Son, Inc.—*Makers of pneumatic valves since 1844.*—Brooklyn, Toronto, London.

. . . Inflate



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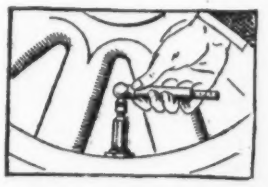
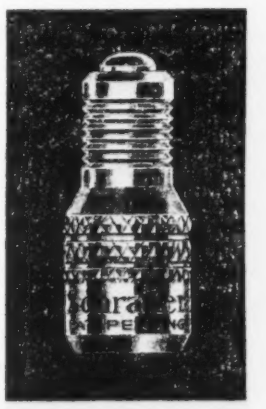


right thru the Schrader tire saving DUBLCHEK Valve Cap



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"Of, By and For the Entire Automotive Industry"

Published Every Day Except Sunday, Monday and Holidays and Tuesday When a Holiday Falls on Monday

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Co-operation Pays Dividends

THERE is considerable doubt as to exactly how Henry Ford views the strike at the Briggs Body plants in Detroit, which has tied up production and delayed announcement of the new Ford models. First we heard that Henry Ford had given a transatlantic telephone interview in which he accused bankers of fomenting the trouble that had delayed his activities. Then it was stated that Mr. Ford felt that business rivals were at the bottom of the outbreak. These statements were later denied by Mr. Ford after spokesmen, or a spokesman, at the plant had said that one of them, at least, was substantially correct.

No one can say exactly what Henry Ford believes as to the actual fundamental cause of the labor trouble which has delayed his announcement and production. He may think the trouble has been fomented by bankers or trade rivals or that it is simply an outbreak by dissatisfied workers. Interesting as the process might be, we cannot read his mind.

However, there is this to be said; if the trouble had been deliberately fomented by persons unknown, there is a certain sort of poetic justice about it. According to believeable reports, the Ford organization intended to make the initial display of its new products coincidental with the opening of the Chicago Automobile Show, which is promoted by the other manufacturers, including the Lincoln division of the Ford company. It is understood that the Ford organization had arranged to use an armory in Chicago for an exhibit of its new models, and that this arrangement was canceled after the strike made the exhibit impossible.

Surely this is a form of chiseling. The Ford company, which does not contribute to the promotion of the national shows, purposed using the gathering of the automotive clans which results from this exhibition to get publicity for its new offerings. It evidently desired to take the play of show week away from the companies which had spent time, effort and money in promoting the exhibition and gathering public attention for its own new models. The Ford organization has done this before now, so that the motivation suggested above is not out of the realm of practical politics.

There is, undoubtedly, great public interest in any new products offered by the Ford Motor Company. Many millions of Americans want to see any new offering made by the Dearborn manufacturer. We believe that if Henry Ford chose to contribute this widespread public interest in any new products of his company, by co-operating heartily with the other manufacturers, the end would be beneficial to the Ford Motor Company as well as to the business as a whole.

Since the days of the Selden patent suit, the Ford Motor Company has held itself aloof from the rest of the industry. Time was when Henry Ford refused to acknowledge that he had any competition. The developments of the past six years, since the old Model T passed out of the picture, must have convinced Mr. Ford of the falsity of such an assumption. Another manufacturer, Chevrolet, has exceeded him in sales in four of these six years. Instead of a predominating figure in automotive production, the Ford Motor Company has become simply one of the big producers, sometimes the biggest and again topped by another company.

This is an age of co-operation, even in industry. The good Christian doctrine of helping one's neighbors is beginning to be realized as good business and not merely a pretty ideal beyond the reach of human nature in its present stage of development.

We can think of nothing better for the entire automotive industry than complete co-operation among the organizations comprised within it, including the Ford Motor Company as a powerful and effective link. The appearance, for instance, of new Ford models at the New York and Chicago national shows would draw many thousands of people to the exhibitions. These models would be viewed by even more visitors than they would be in a separate exhibit held during the periods of the shows. The industry as a whole, including the Ford organization, would benefit by this. We recommend the thought to all automotive manufacturers.

300 TRUCKERS MEET IN NORRISTOWN, PA.; FORM NEW CHAPTER

Philadelphia, Jan. 31.—An important meeting of truck operators and others, bringing the attendance to 300, was held in the ballroom of the Valley Forge Hotel, Norristown, Friday night, at which addresses were made by Ted V. Rodgers, president of the Pennsylvania Motor Truck Association, Inc.; Harold S. Shertz, executive director of the Highway Users' Conference of Pennsylvania; A. D. Aldrich, Newton Coal Company, and state treasurer of the P. M. T. A., Inc., and "Mac" Parker, radio broadcaster and reporter for the Philadelphia Record. The meeting, which was presided over by A. J. Baldwin of the Atlantic Refining Company, was called by the Montgomery County Regional Committee of the Highway Users' Conference of Pennsylvania.

In connection with the meeting a temporary organization of a Montgomery county chapter of the P. M. T. A. was formed which, when perfected, will be the twenty-third permanent chapter of the association, these supplementing the regional committees of the Highway Users' Conference, covering all the counties of the state.

Mr. Shertz said that from a study of the facts, there was no justification for the railroads' expenditures of money and energy in their campaign against the truck. Clearly, he said, the truck, considered unorganized and leaderless, was being picked on as the medium to carry a campaign to divert public attention from the more serious difficulties of the railroads. The accomplishment of what was asked by the railroads in restrictions and burdens upon the truck would, the speaker said, deprive the railroads of direct tonnage gained through the automotive industry and improvement of highways, and retard recovery of railroad securities by removing the effectiveness of the auxiliary to the rails of the motorized highway, more sorely needed for the recovery of industry and agriculture to create traffic upon which the property of the railroads is dependent.

Mr. Rodgers explained the campaign of safety and courtesy which has been conducted by the Pennsylvania Motor Truck Association. He emphasized the accomplishment in this respect by quoting figures to show that accidents of commercial vehicle drivers had been reduced to about the same percentage as accidents of passenger car operators had been increased, despite the fact that there was an increase in registration of commercial vehicles, while there was a falling-off in percentage in registration of passenger cars.

Mr. Parker urged the necessity for organization to meet the organizations perfected by the railroads, and told some personal experiences with the methods of railroads in legislative work.

CONNECTICUT BILL WOULD PUT LIGHTS ON NIGHT HIKERS

Hartford, Conn., Jan. 31.—Bills providing that pedestrians on unlighted highways shall be required to carry lights or signalling devices, that no state employee shall be provided with a car costing more than $700 and making liability insurance compulsory were among those dumped into the legislative hopper of the Connecticut General Assembly last week.

One bill provided that no registration should be granted until the applicant produced proof that he had paid his taxes, while another would withhold registration until the title of the car had been checked. Making the records of gasoline tax collections public ad providing penalties for display of motor fuels and oils in such manner as to deceive the purchaser as to their quality are provisions of two other bills.

Automobile mechanics would be required to secure licenses under the terms of one measure, while another would require a semi-annual inspector of safety equipment on cars. Making fuel for marine motors subject to the gasoline tax, from which it is now exempt, is a provision in another bill.

SPECIAL EXHIBITS AT CHICAGO

WILLYS-OVERLAND—At Auditorium Hotel.

ROCKNE MOTOR CORPORATION—Sales room, Hotel Congress.

CHRYSLER CORPORATION, including De Soto, Dodge, Plymouth—Hotel Congress.

GENERAL MOTOR CORPORATION, all units—Hotel Stevens.

PACKARD MOTOR CAR COMPANY—Edgewater Beach Hotel.

LINCOLN SALON—The Drake Hotel.

DETROIT METAL SPECIALTY CORPORATION, Detroit, Mich.—Hotel Stevens.

W. HERBERT BRETZLAFF, Detroit, Mich.—Hotel Congress.

FRENCH AND HECHT, INC., Davenport, Ia.—Hotel Congress.

WILLOUGHBY COMPANY, Utica, N. Y.—Drake Hotel.

Calendar of Coming Events

27-Feb. 15—Cairo, Egypt. International Salon.

28-Feb. 4.—Portland, Me. Portland Automobile Dealers Association, show. Exposition Building. L. P. Borman, manager.

28-Feb. 4—Chicago. National Automobile Show, Coliseum.

28-Feb. 5—Washington, D. C. Washington Automotive Trades Association, show.

30-31—Chicago, Ill. National Automobile Dealers Association, convention. Medinah Athletic Club.

30-Feb. 4—Springfield, Mass. Automobile show.

FEBRUARY

1-11—Indianapolis. Twenty-second annual show. Indiana State Fair Grounds.

4-11—St. Paul, Minn. St. Paul Auto Dealers Association Show.

6-11—Ottawa, Canada. Ottawa Automotive Trade Association show, Coliseum. L. M. McCoy, chairman advertising committee.

6-11—Denver, Col. Automobile show.

7-11—York, Pa. York County Automobile Dealers Association, Inc., show. R. C. Keller, president.

9-11—Springfield, Ill. Springfield Automobile Dealers Association, show.

9-12—South Bend, Ind. Automobile Show.

11-15—Trenton, N. J. Annual Automobile Show, Trenton Armory. John L. Brock, manager.

11-17—Toledo, O. Toledo Automobile Dealers Association Show.

11-18—Kansas City, Mo. Kansas City Motor Car Dealers Association Show. Geo. A. Bond, manager.

18-23—Columbus, O. Automobile Show in Columbus Auditorium.

22-25—Evansville, Ind. Evansville Automobile Dealers Association Show. Otto Hartmetz, president.

25-Mar. 4—Seattle, Wash. Seattle Automotive Trades Association Show.

MARCH

5- 7—New Orleans. Automobile Show in Municipal Auditorium. Gordon Herbert, manager.

10-19—Geneva, Switzerland. International Automobile Show.

International Harvester Offers Beauty and Distinction in a New Truck of High Quality at Low Price
$360
for 113-inch wheelbase 20-h. p. chassis, f. o. b. factory (tax extra).

INTERNATIONAL HARVESTER'S new Half-Ton, Six-Cylinder truck is far more than a routine new model. An International chassis priced at $360 is real news for every truck user. Backed by the International reputation for quality and service—here is an outstanding value in performance and economy. Visit one of our showrooms today and see how exceptional quality has been clothed in style and beauty. In the light-truck field we offer you the International Model D-1 as a *value beyond comparison.* You are cordially invited to inspect this new truck. Other models ranging up to 7½-ton.

INTERNATIONAL HARVESTER COMPANY

611 W. Roosevelt Road of AMERICA (Incorporated) Chicago, Illinois

COMPANY-OWNED SALES AND SERVICE BRANCHES IN CHICAGO

611 W. Roosevelt Road — Phone Roosevelt 4800
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2919 So. Western Ave. — Phone Roosevelt 4770

Company-owned Branches also at Aurora, Chicago Heights, Gary, Grand Rapids, Kankakee, Kenosha, Madison, Milwaukee, Peoria, Racine, Rockford, South Bend, Springfield, and over 100 other principal cities.

INTERNATIONAL TRUCKS

600 DEALERS HEAR WILLYS AT MEETING

(Continued from Page 1)

Overland, at the annual luncheon today in the banquet hall of the Auditorium Hotel, and it was greeted with tremendous applause by the more than 600 Middle West dealers who attended.

"Willys-Overland is determined to return to a position of leadership in America's low-priced car field, and

John N. Willys

L. A. Miller

the greatest inspiration we have had in years is the number of retail sales already consummated in all parts of the nation," said Mr. Willys. "Although our car has been before the public less than a month, our volume of retail sales and orders placed at the factory for immediate delivery is so far ahead of last year that I am confident that our 1933 business will be more than 300 per cent. ahead of 1932.

"I expect 1933 to be one of the most successful years in Willys-Overland history. In producing our new car, which will give thirty miles on a gallon of gas, we have cut operating costs in two. It is economy the buyer demands today, yet with no sacrifice in style or quality. In the heyday of prosperity the car buyer was not vitally interested in fuel economy. Amount of monthly payments was not so important, for he had ample income to meet them. Now the buyer looks for low initial cost, low operating and maintenance costs."

L. A. Miller, president of the company, was chairman of the luncheon meeting, and, in a brief talk, he pointed out that manufacturing economies effected during the past three years were important factors in the development of the current low-priced models.

SPRINGFIELD OPENS SHOW, ATTENDANCE UP

(Continued from Page 1)

mittee of the association, which includes F. L. Sanford, president; Sterling A. Orr, vice-president; G. E. Adams, treasurer; A. E. Center, A. G. Medlicott, R. M. Sauers, A. V. Reopel and Harry Young. Once again the association will do its share in contributing to welfare work in this city by donating the receipts of one day to the mayor's unemployment fund, and opening day was set aside for this purpose. This is the third year in which this contribution has been made, and each time a sizable amount has been turned over to the mayor.

The exhibitors are: A. E. Center, Inc., Pontiac; Meyer-Catok Motor Sales, Inc., Willys; W. R. Parsons, Inc., Cadillac and La Salle; Packard Motor Car Company, Packard; Pynchon Motor Sales, Inc., Lincoln; Central Motor Sales Co., Inc., Pierce-Arrow; F. L. Sanford Co., Dodge; R. M. Sauers, Inc., Chrysler; Sterling A. Orr, Inc., Studebaker; M. C. Barrett, De Soto; J. S. Harrington Inc., Hudson and Essex; Tait Motor Sales, Inc., Graham; A. V. Reopell. Chevrolet; Norcross-Camercon, Hupmobile; Sanford, Sauers, Barrett, Plymouth; Nash Springfield Company, Nash; Young Motor Company, Oldsmobile; Sterling A. Orr, Inc., Rockne; Springfield Buick Company, Buick; Reo Motor Sales, Inc., Reo.

AUTOMOTIVE EXPORTS INCREASE 15% IN DEC.

(Continued from Page 1)

and trucks increased by 33 per cent., as compared to November, with rises noticeable in the valuation of each price class and weight group.

Exports of passenger cars during December totaled $1,332,043, as against $996,251 in November, while the truck figure was $1,046,845, in comparison with $782,431. Australia, Belgium, Argentina and the Union of South Africa were the leading market for trucks, though a certain portion of the Belgian shipments are intended for re-export.

Exports of miscellaneous automotive products were valued at $3,129,220, a gain of but 4 per cent. over the November total. Approximately one-half of the items included in this group, however, registered improved valuations, among these being parts for assembly, parts for replacement, brake lining, both molded and not molded, trailers and motor boats. Items showing the largest decreases included engines for trucks and buses, spark plugs, accessories, service appliances, cycle parts and accessories and engines for motor boats.

GENERAL MOTORS HOST TO ART TEACHERS

(Continued from Page 1)

decoration. There are nine of these mural decorations, of heroic size, composed of inlays of rare and exotic woods, twenty-seven varieties from all over the world being used in their composition. They are from designs by George Wittbold of Chicago and were executed by Miklos Gaspar and Matt Faussner. All three are well known in arts and crafts circles.

Mr. Gaspar is responsible for a number of the murals at the General Motors exhibit at the Century of Progress Exposition, and his work also decorates the Fisher Building in Detroit, the Medinah Athletic Club and the Foreman Bank Building in Chicago and numerous churches.

PA. DRIVERS WARNED TO KEEP OLD LICENSES

Philadelphia, Jan. 31.—Pennsylvania motorists should not throw away their old 1932 driver's license just because the calendar now records 1933, and the drivers have sent in their $2 and received a new license card.

REEVES REPORTS HEAVY INCREASE IN SHOW ATTENDANCE

(Continued from Page 1)

greater than last year, and on Sunday 34 per cent. greater.

"All this is the result of an attractive fast moving show with many interesting exhibits of precision and testing machinery and forms of demonstrations as well as the beautiful, full value cars of our manufacturers.

"To this we must add our appreciation of the wonderful support given the show by everybody in Chicago, including radio, newspapers, hotels, street cars, elevated roads, and even the newsboys on the streets.

UNITED MOTOR SERVICE HOLDS SHOW MEETING

(Continued from Page 1)

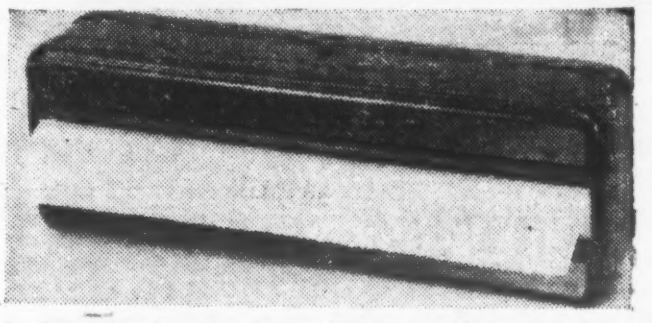
scheduled for the week by motor firms. The red lacquer room was almost hidden by a profusion of velvet in black silver and gold.

Before and after dining the guests visited the special display of products arranged by L. C. Wittenberg, assistant advertising manager. It occupied more than 700 feet and on display were exhibits of the Delco Remy Corporation, the Delco Products Corporation, the Harrison Radiator Corporation, New Departure Manufacturing Company, Hyatt Roller Bearing Company, A. C. Spark Plug Company and the United Motor Automobile Radio.

CREDIT WHERE DUE

The photograph of the interior of the Coliseum which was reproduced in Automotive Daily News yesterday was furnished by Kaufman and Fabry, Chicago.

Dash Towel Cabinet Shown at Coliseum



An interesting invention in the form of an absorbent, lintless, washable paper towel recently developed by the research laboratories of the Brown Company, paper manufacturers, at their Berlin, N. H., plant, is being exhibited and demonstrated at Booth 49 in the Coliseum at the Chicago Automobile Show this week.

Of particular interest in this display is an electric clothes washer in which the paper towels are actually washed and run through a ringer similar to a cloth to demonstrate their tensile strength.

These towels, known as Nibroc wet strength paper towels, come in packages or refills of fifty each which fit into the patented Nibroc cabinet from which they are taken one at a time as required.

The metal cabinet, size about 10x3x3 inches, is made of stamped metal. It is installed with two screws inside the car on the right side under the dash or where most convenient for use.

The towels are used like a cloth for cleaning and removing oil or grease on the hands or wiping the windshield and windows or engine, parts of the car, etc. They also may be used as white napkins for picnics.

These Nibroc cabinets and towels are standard equipment on the 1933 Hudson and Essex Terraplane and have been endorsed by Pierce-Arrow. This item is being distributed to the trade by 600 distributors and is handled by the leading automotive jobbers and accessory dealers and garages, including Hudson and Essex distributors and all Pan-American filling stations.

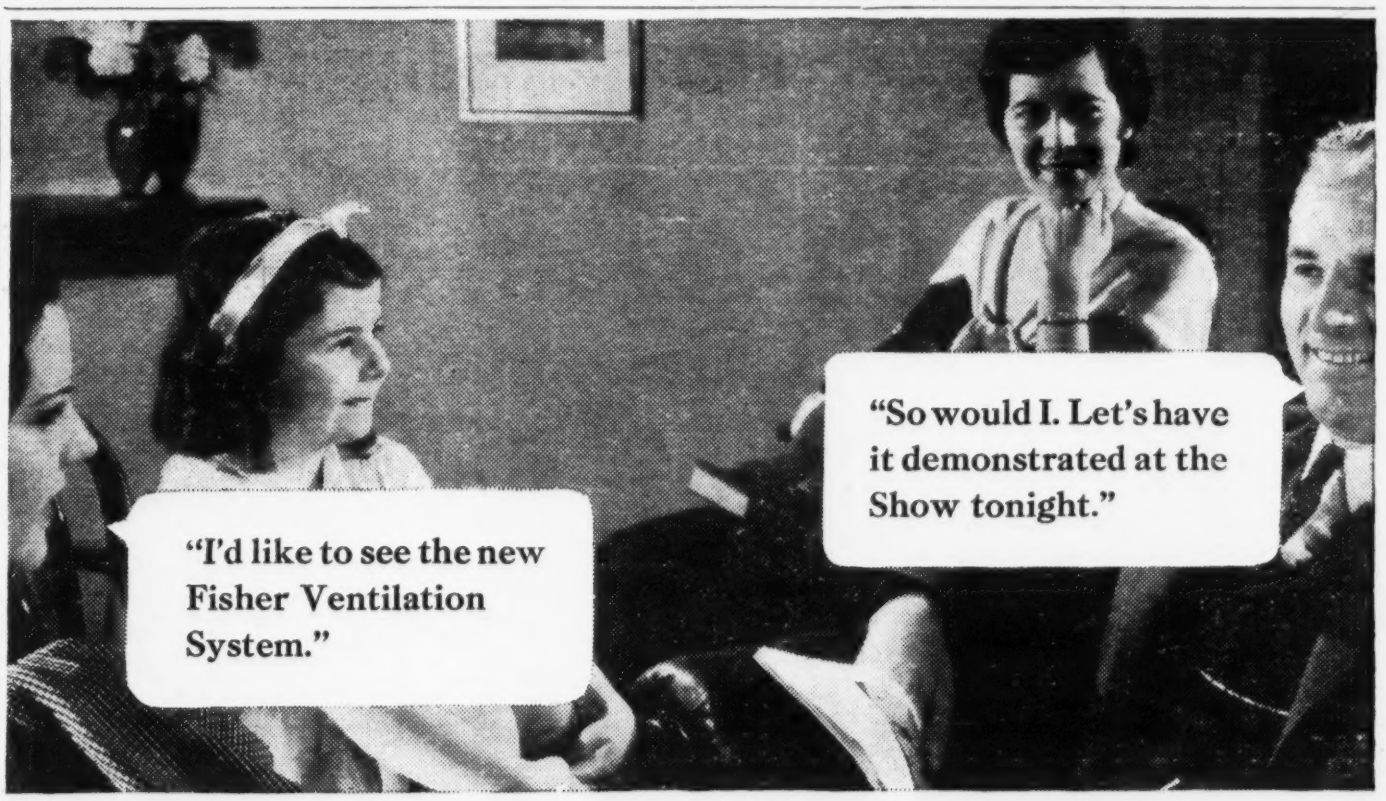
They are patented under the trade name Nibroc and are manufactured under this name by the Brown Company, Portland, Me.

GAMBILL ENCOURAGED BY HUPP RECEPTION

(Continued from Page 1)

for a share of the popularity of this model, which has a wide 60-inch tread and consequently has been built without any skimping of seat width.

"Another very noticeable thing about public preference this year is the demand for quietness and smoothness. Our 'cushioned power,' provided by a combination of rubber and pneumatic engine mounting, is responsible for this characteristic of our 1933 models and it is helping us close sales. If the week at the show continues in the way it has gone for the first two days, it will exceed our best expectations."



NEW FISHER NO DRAFT VENTILATION UNIVERSALLY POPULAR!

The new Fisher No Draft (I. C. V.) ventilation system is now being demonstrated at the Automobile Show in the Coliseum, and at the General Motors Exhibit at the Stevens Hotel. Fisher No Draft (I. C. V.), individually controlled ventilation, is a scientifically designed system which is *built into the car* as an integral part of the body. It is not an "accessory" or an "attachment." It is exclusively in General Motors cars, the only cars with Body by Fisher.

Exclusively in CADILLAC · LA SALLE · BUICK · OLDSMOBILE · PONTIAC · CHEVROLET

Production—Engineering—Factory

Edited by Herbert C. Chase

FISHLEIGH URGES REVISION IN CAR DESIGN

This is the second installment of a paper delivered recently by Walter T. F. Shleigh, consulting engineer of Detroit.

Figure 1 shows the increase in average automobile touring speeds (cross-country and non-traffic) in the years from 1902 to 1932, based upon the recorded judgment of eight experienced engineering executives. Two important characteristics of this speed-time curve should be noted; namel, that average touring speeds have increased continuously and that this increase has been greater in each successive decade. Projecting the curve ahead ten years indicates an average touring speed in 1942 of 75 miles per hour. This prognostication seems generally to be concurred in, or even regarded as conservative.

We are justified in expecting fundamental changes, in over-all shape and in mechanical arrangement. We may as well face the fact that many of our superstandardized ideas about automobiles of today must not be continued, if progress is to continue.

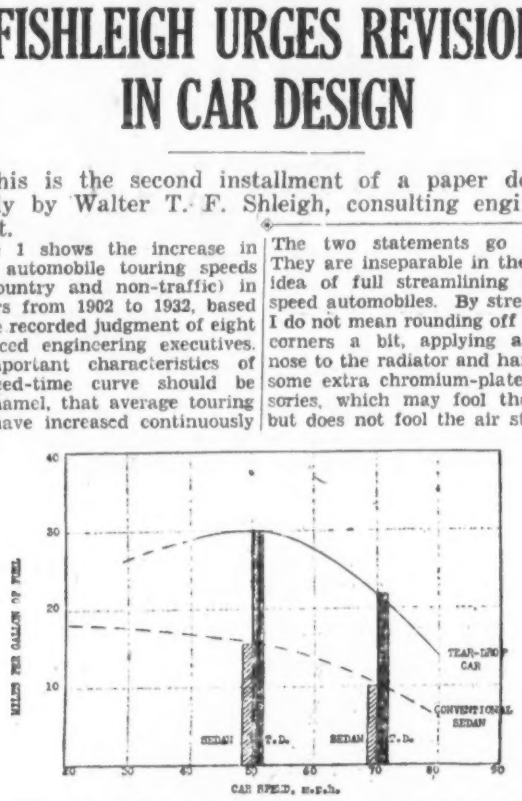


FIG. 3—Miles per gallon of fuel for tear-drop car is double that for the conventional sedan at touring speeds

Facts justify two rather radical observations: (a) The general shape and appearance of the modern automobile are not only questionable for highspeed economy and "peppy" performance and comfort—they are wrong; and (b) the present mechanical arrangement with one seat over the rear axle and with the engine out in front of a box-shaped, wind-resisting body, with propeller-shaft drive from the engine under the body to the rear axle is not only questionable—it should be changed. The two statements go together. They are inseparable in the general idea of full streamlining of high-speed automobiles. By streamlining I do not mean rounding off the body corners a bit, applying a Roman nose to the radiator and hanging on some extra chromium-plated accessories, which may fool the public, but does not fool the air stream or the gas station attendant, who smiles when we order ten gallons of gasoline when it might just as well have been five gallons.

It is not difficult today to find an automotive engineer who knows in a general way about streamlining and full-streamlined forms; who realizes that, because of the simple geometry of the lay-out, the engine-the-rear idea is necessary to the practical accomplishment of full and efficent streamlining of the automobile without impracticable rear-axle overhang and impracticable overall length of car. There are also engineers who, failing to appreciate fully the advantages inherent thereto, think that the automobile will have to be surreptitiously streamlined, and the engine "sneaked to the rear" in some way so that the public will not discover it.

Some engineers forget the old adage that "whatever is mechanically and functionally right, will look right." They are still attempting to devise charts and graphs which

(Continued on Page 12)

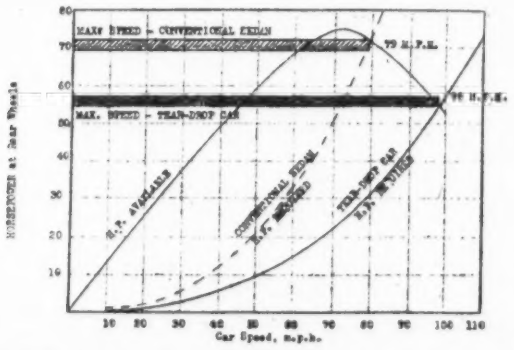


FIG. 4—Maximum car speeds: Tear-drop, 98 m. p. h. Convertible sedan, 79 m. p. h. (Same engine and 4 to 1 gear ratio)

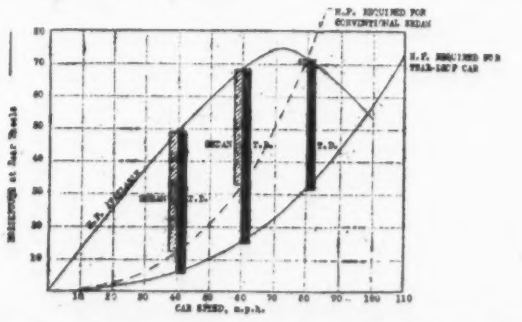


FIG. 5—Curves showing extra horse power available for acceleration and hill climbing for conventional sedan and tear-drop car at various speeds. (Same engine and 4 to 1 gear ratio)

SHIPPING CONTAINER FOR SPINDLES

The Ex-Cell-O organization has devised a new shipping container to carry grinding spindles to their purchasers. These units are often injured in transit and this new package is intended to end such mishaps.

A hinged box has been designed and built so that the spindle is held securely in position, eliminating slipping from end to end which can easily damage the spindle.

The spindle rests on three cradle supports in the bottom of the box. It is clamped from the top by two soft wooden blocks to fit the curvature of the spindle. Each block is tightened to position by wing nuts.

At the pulley end, the block is just the width of the pulley between the flanges. This block is guided in a verticle position by two strips properly spaced inside the box. When this block is tightened into position the spindle cannot move in any direction. All pressure is uniformly exerted over the pulley and can in no way damage the spindle ball bearings.

A similar clamp is provided for locking the front end of the spindle into position. No excessive strain is applied on this block, as it merely holds the front end down so the entire spindle rests flat on the three cradle supports in the bottom of the box. There is a clearance space allowed at each end of the spindle for additional protection of the spindle while being handled.

SYNTHETIC WAXES

The Halowax Corporation, New York City, is offering a line of synthetic waxes, which have widespread usefulness.

Halowax is a synthetic wax, possession characteristics, it is claimed, not ordinarily found in vegetable, mineral or animal waxes. When applied to wood, metal or other surfaces, it is claimed to afford protection against the corrosive action of acid, alkaline solutions and acid fumes. It is also stated to be a good plasticizer for natural gums, synthetic resins and other waxes. It has a high melting point. It is tough, has a low volatility and solvent action. It does not readily oxidize. The product can be used in compounding many types of liquid, paste and emulsified polishes. It possesses excellent flame extinguishing properties.

ROLL BACK STOP

Josiah Anstice & Co., Rochester, N. Y., has announced a new model of its Roll Back Stop. This device is designed to stop a car, bus or truck from rolling backward without the use of the brakes, and with the gearshift lever still in a forward speed position, with the clutch held out or with the lever in neutral. When the shift lever is moved into reverse the Roll Back Stop releases, and the car is free to move backward. In neutral position, after having been in reverse, the car is free to roll backward, and just before the car comes to a stop the gears may be shifted into forward without this device suddenly taking hold and checking the movement of the car. The moment the power is applied to drive the car forward the device is set to stop rolling backward. This device is not intended as a replacement unit, but for original equipment.

ARC LAMP GLOBES

The C. F. Pease Company, Chicago, is placing on the market a new Thermex arc lamp globe. This unit is described as being blown from a special new glass containing a high volume of silica and having a minimum of expansion. The globes are designed to give great resistance to high and rapid changes in temperature. It is stated that they have shown a 400 degree higher melting point and a great degree of resistance to ordinary breakage.

Need Standards for Diesel Fuels

The growing interest which American engineers are displaying in development of the Diesel type of engine gives point to a paper read last week at the S. A. E. meeting on fuel standards for high-speed power plants of this variety.

This paper was entitled "Fuels for High-Speed Oil Engines," and was presented by Max Hoffman, Diesel engineer for the Waukesha Motor Company. Automotive in its current issue presented a brief resume of this speech, but the interest shown in the subject suggests a more elaborate presentation of this interesting paper, as follows:

One of the most perplexing problems confronting the designer and the operator of high speed Diesel and oil engines today is the adaptation of their engines to the available fuels or the selection of suitable fuels for existing engines. The high speed Diesel engine is more sensitive in regard to the various fuels than its slow speed companion. This fact, combined with the lack of available data regarding those characteristics of fuel oils which have an influence on their ignition, degree of roughness and combustion in the engine, has seriously handicapped the progress of the high speed Diesel engine for a long time. The paper continues in part as follows:

The past year has seen most remarkable progress toward the solution of this problem. There is no longer any excuse for hit-and-miss methods of selecting fuels suitable for the various types of oil engines. The time has come when Diesel designers and fuel producers must co-operate to produce a standard rating for oil engine fuels. This rating should permit the engineer to judge whether a certain fuel will burn without objectionable combustion knock in a certain type of engine—in other words, it should be similar to the octane rating, now universally adopted for carburetor fuels.

There is no real reason for the widespread belief that the automotive Diesel engine is as critical in regard to fuels as the modern high compression carburetor engine. It is more sensitive than the slow speed engine, which will digest practically all kinds of petroleum products, but a correctly designed automotive Diesel can be operated with a much larger variety of fuels than any carburetor engine.

What is called the "delay period" in Diesel fuel combustion is the most imprtant factor governing the smoothness of a Diesel engine. It depends on two points only: the temperature available in the combustion chamber at the beginning of injection and the self-ignition characteristics of the fuel.

The second stage of the combustion process, that of spontaneous combustion, is initiated with the self-ignition of a nucleus of fuel drops in the zone most favorable for this purpose, spreading immediately over the combustion chamber, as far as a combustible mixture of fuel and oxygen exists. For this stage, the fuel drop size and the air movement are of vital importance; together with the proportion of the total fuel charge present in the combustion chamber at this time, they determine the angle of pressure rise during this period.

In the third stage of controlled combustion, the fuel burns immediately on leaving the nozzle. Here, the combustion pressure can be controlled directly by the rate of injection which, in turn, depends on the design of the fuel cam and its correlation with the fuel injection valve.

All oil engine fuels are heterogeneous mixtures of a large number of hydrocarbons, each of which has its different chemical composition and its particular molecular structure. The important fact for the purposes of this paper is that the molecular structure of these hydrocarbons, i. e., the way carbon and hydrogen atoms are tied together in the molecule, is the determining factor in a fuel's resistance to ignition. The four groups of hydrocarbons present in oil engine fuels are in the paraffins, the oleofines, the naphthenes, and the aromatics.

In the paraffins and olefines, the C and H atoms are loosely connected in the form of a chain which can be easily broken by the heat, and thus made to combine with oxygen. Therefore, these two groups have a low resistance to ignition, and consequently a short delay period in a compression-ignition engine.

In the aromatic molecule, the C and H atoms form a closed ring braced inside, which offers a larger resistance to their decomposition by heat. This structure makes fuels of this nature have a long delay period in an engine. The molecular structure of the naphthenes ranges in between the paraffins and the aromatics, as does their delay period. As a rule, however, they range much closer to the paraffins and olefines than to the aromatics. While the foregoing distinction applies to a large majority of hydrocarbons, it is not true in all cases. There are certain paraffins of high thermal stability which means a long delay period. On the other hand, certain naphthenes may have a weak molecular structure, and consequently a shorter delay period than many paraffins. American oil engine fuels distilled from crude petroleum consist of a combination of these four groups, with the paraffins usually predominating. Depending on the type of crude, there are large variations possible in the percentage of each group, a fact which explains the large differences in the behavior of such fuels in the engine. In the distillates of coal tar, such as tar oil, the aromatic group forms the largest proportion.

Such aromatic fuels have been successfully used in slow-speed Diesel engines, principally of the air-injection type, in which the compression was carried higher than usual, or which employed a special pilot injection of a paraffin base fuel. The high resistance to ignition of the aromatics would result in a very long delay period in a high-speed Diesel engine, a fact which makes them unsuited for this purpose.

If we expect a group of synthetic fuel oils produced by modern high-pressure cracking processes, most Diesel fuels of low or medium viscosity on the American market today, the proportion of aromatics and napthenes is low enough to make them suitable for a modern high-speed Diesel engine. The term "mod" is meant to imply that all factors now known to reduce the delay period have been applied to its design.

Present-day fuel oil specifications usually refer to their various physi-

(Continued on Page 13)

NEW INSULATORS

The Inland Manufacturing Company has developed a new type of grommet insulator, known as the Inlox, for breaking metallic contact at any point to prevent the transmission of vibration. This device consists of a flanged cup, which holds the rubber grommet under constant and predetermined pressure, permitting the retaining bolt to be drawn home against the lock washer.

The rubber grommet molded to varying degrees of hardness and plasticity to meet particular needs may be made to accommodate any metal gauge. The rubber compound was developed in the company's laboratories.

The Inlox insulator is recommended specifically for use in such locations as muffler and tail pipe, mounting brackets, gas tank mountings, fenders, dust shields, sheet metal body parts, horn mounts, etc.

Fly the flag of Studebaker *if you want to make money this year!*

STUDEBAKER offers a "tailor-made" franchise for 1933—the most equitable franchise in the industry . . . *hand-fit* to meet your needs and your market.

If you have a low-priced car territory, the brilliant new 1933 Rockne—roomier, more luxurious, more powerful than the Rockne which obtained the biggest per cent of the total volume ever sold by a first year car—will put you absolutely in the forefront in public interest.

If you can sell medium-priced cars, the new Studebakers—led by a sensational 100-horsepower Commander Eight at $1000 and up f. o. b. factory—and including two new President Eights and a remarkable new Six—will enable you to offer such supreme advantages as Power Brakes, Autothermic Control of Carburetion and Manifolding and 52 other betterments.

If you can sell the finest cars money can produce, the two new Pierce-Arrow Twelves and the new Eight at their new low prices will give you the lion's share of your territory's fine car business.

And if you want to dominate in the commercial field, you have your choice not only of Studebaker Trucks but of White Trucks and Buses, Indiana Trucks, Pierce-Arrow Trucks, the new Rockne Delivery Car and Studebaker Funeral Cars and Ambulances.

And behind you—whether your operation be small or large—will stand the resources, experience and pride of the oldest vehicle manufacturer in the world. Write or wire for details today.

THE STUDEBAKER—PIERCE-ARROW—
ROCKNE SALES CORPORATION
South Bend, Indiana

STUDEBAKER CARS
$840 *to* $2040

ROCKNE SIX
$585 *to* $740

PIERCE-ARROW CARS
$2385 *to* $7200

ROCKNE DELIVERY CAR
$615

STUDEBAKER TRUCKS
$670 *to* $1425

INDIANA TRUCKS
$885 *to* $4800

WHITE TRUCKS AND BUSES
$1700 *to* $16000

PIERCE-ARROW TRUCKS
$1950 *to* $7550

BEAT THE DEPRESSION WITH STUDEBAKER

Chicago Show Sales Pass 300; 60,000 Attend in First 3 Days

(Continued from Page 1)

dicate a liberal demand for the medium-priced products, and there have been several sales among the high grade offerings.

The Continental booth is the scene of much interest. This new product has so crowded the exhibit that salesmen find it difficult to close orders. However, the Chicago territory has been well provided with dealers who have signed up within the last month, and the after-show business with this line should be most lucrative.

Today visitors stormed the Rockne exhibit for keys in the contest which proved so popular at the New York show.

Other contests promoted by exhibitors are proceeding with similar success. These events add to the zest of this year's exposition and have created much word to mouth publicity. The result is most salutary, judging from the crowds.

There is a marked increase in the women's attendance, according to observers who have been much impressed by the interest shown in the show this year by the fair sex. They are carrying pamphlets from company booths for a more leisurely inspection at home.

Weather conditions, while cloudy, have been favorable for show attendance. The thermometer has not been below 30 since the opening despite the fact that the weather man has predicted snow or rain during the last few days. It is believed climatic conditions have helped the attendance combined with the fact that the admission has been reduced to 55 cents including war tax. Today the sun came through clearly for the first time this week to greet the fourth day show goers.

The accessory division of the show this year seems to be drawing more attention than heretofore.

There is a most interesting display of fitments in the gallery in the Coliseum that is receiving close inspection by owners and trade alike. Demonstrations help to ballyhoo these exhibits and never before has the visitor been so well entertained in this section which also occupies the second floor of the annex.

On the main floor of the Coliseum luxury is expressed to the last degree in the new sedan built by Pierce-Arrow. It sells for $10,000, and looks like a variation of the bullet-shaped racing car used to shatter records at Daytona Beach some months ago. Only five of these cars have been manufactured. One has been sold to Irene Bordoni, the French musical comedy star. Its replica is guarded by a Negro giant in an ivory uniform almost the identical hue of this ultra modern automobile.

Tuesday was theatrical day, and the de luxe Pierce-Arrow was the center of attraction. Invitations were extended to troupes playing Chicago theaters.

Much interest centers on the Willys exhibit, where the latest design in modern motor cars is attracting no end of attention. It is reported that more prospects have been booked at the Willys booth than at any show since 1929.

After some deliberation by the judges a Duryea owned by Glade Ralihan of Kendallville, Ind., was selected as the winner in the "oldest car" contest. This antique now graces a booth at the show. Second place went to Earl Brander of Rockford, Ill., who showed an 1895 Duryea, while the selection for third place was an 1899 Oldsmobile owned by Joseph E. Krick of Blue Island, Ill. Honorable mention went to an "Oriole Locomobile," shown by Mrs. R. B. Spoor of Park Ridge, Ill., and Stanley Steamer, shown by Roy Monsen of Chicago.

The judges were Al. Reeves, show manager; Lafayette Markle, president of the Chicago Automobile Trade Association; Thomas J. Hay, president of the National Used Car Market Report; Herbert Trevellyan, zone manager for Buick-Oldsmobile-Pontiac Sales Company, and Chris Sinsabaugh of Automotive Daily News.

SPARKS

(Continued from Page 2)

distant country. The order was for a carload of double action thermostatic control Monroe shocks.

* * *

THE COLUMN has told you of the co-operation given the Nek York, Detroit and Chicago shows by the New York Journal, Detroit Times and the Chicago American through the efforts of the Rodney Boone organization, advertising specialists. Now said column is pleased to report that the retail salesmen's contest promoted by the Chicago American has to date enrolled more than 1,700 salesmen striving for prizes on a dollar volume basis, as against 1,000 for the same period last year.

* * *

ADD SUNDAY BIRTHDAYS: Jim Braden, automobile editor of the Chicago Daily News; age unknown. And yet this same Jim Braden, in his column Monday again questions the driving ability of the conductor of Sparks from Detroit. And this in the face of me being selected as a judge in the oldest car contest promoted by the show management.

FULTON COUNTY, GEORGIA, HAS REGISTRATION GAIN

Atlanta, Ga., Jan. 31.—Marcus McWhorter, director of the motor vehicle division of the State Department of Revenue, reports that the county of Fulton was the only one in Georgia showing an increase in the number of passenger automobiles registered in 1932. Fulton county had 55,444 cars registered in 1931 and 60,202 in 1932, Mr. McWhorter reported.

SO. CAROLINA COMMITTEE ON ROAD BONDS AND TAXES

Columbia, S. C., Jan. 31.—The Senate Finance Committee voted to restrict further issuance of state highway bonds and decided to render a majority report against a bill to reduce motor vehicle license fees 50 per cent.

An estimate by B. M. Sawyer, chief highway commissioner, fixed the amount of revenue for 1933 from licenses at $2,150,000 and from the gasoline tax at $5,300,000, approximately the same as 1932 income from the two sources.

Helping you build cars that start better run better stop better *and* SELL BETTER!

BENDIX

PR

BENDIX MECHANICAL BRAKES • B-K VACUUM POWER BRAKES • BENDIX STARTIX • BENDIX STARTER DRIVE • STROMBERG CARBURETORS
LUBRICATION EQUIPMENT • SCINTILLA MAGNETOS • BENDIX AIRPLANE WHEELS AND BRAKES • ECLIPSE AVIATION ENGINE STARTERS AND
BENDIX SEAMLESS FLEXIBLE METALLIC TUBING • FRIEZ WEATHER AND NAVIGATION EQUIPMENT • CORY SIGNALLING, COMMUNICATION AN

FEDERAL GAS TAX DOOMED IN SENATE

(Continued from Page 1)

the Senate would act on the tax at this session, and even if the measure should be called up in the upper body, it was expected that the whole matter would be reopened.

The House Ways and Means Committee approved continuation of the tax, expected to raise $137,000,000 a year over objections by the American Automobile Association, the National Automobile Chamber of Commerce, represented by Vice-President Pyke Johnson, and other organizations representing the automotive and petroleum industries.

Appearing before the House committee, Ernest N. Smith, executive vice-president of the A. A. A., vigorously protested against continuance of the tax.

He declared that the Federal levy is an additional burden on already overtaxed motor transport, placing Federal approval on the "vicious" practice of class taxation of motor vehicle owners for general purposes.

He told the committee that the A. A. A. favors a general tax on manufactured products with legitimate exemptions for necessities, such as food and clothing, instead of the existing Federal motor excise levies.

Mr. Smith cited figures showing heavy decreases in registration in the last three years and at the same time heavy increases in the motor tax burden.

F. W. D. PROMOTES CAMPBELL

Clintonville, Wis., Jan. 31.—Lewis P. Campbell, who has been a member of the F. W. D. Dealer Sales Division during the past year, has been appointed as a district sales supervisor by the Four-Wheel Drive Sales Company of Clintonville, Wis. His territory will comprise the states of Colorado, Wyoming, New Mexico and parts of the states of Nebraska and Texas.

FAULKNER DECLARES SALES DIVISIONS LAG

(Continued from Page 1)

E. Gambill and Thomas J. Hay, appeared on the program.

Mr. Faulkner had a message for the dealers bearing on the present day sales situation.

"For many years we have had a great joy ride in our business," said Mr. Faulkner. "Markets are constantly changing and have changed to the extent that we cannot now take old sales figures as a basis for operation. The cars that sold for $7,000 ten, eight, even five years ago, are but pitiful and crude in comparison with the dependable merchandise we sell today for from $2,000 to $3,000.

"I do not believe that we in the sales division have kept up with our engineers. I think, however, that we in the sales division have been responsible for many of the great developments that have taken place in the industry.

"We haven't even started in our part of the business to lick the used car problem, we are all responsible for that. We told our prospect that it was to his advantage to put up a certain amount of cash and trade in his old car for a new one, rather than have it repainted, retired and repaired.

"I think we have made greater forward steps in the last two years than ever before. I think we will look back some day when this depression is over and be thankful for the great development that

R. H. Faulkner

J. W. Tarbill

came during these years. I think, as a whole, in the sales divisions, our showing has not been a thing to be proud of.

"Transportation is our business. We brought the city to the country. Imagine Chicago, if all passenger cars, trucks and taxicabs were pulled off the streets overnight. Imagine the paralysis of its commerce, its business and its social life.

"We are starting a new year. America needs leadership. Business has been deflated. I know that dealers in this country, if they got 15 per cent. more business than they got last year would be in the black, and 30 per cent. more business in these United States for a great many people would mean prosperity, because they have their houses in order. It is a time for sane thinking.

We must get close to our salesmen in these days. We cannot turn them loose as we formerly did. We must give them more help; give them the thing they need most today, friendship and belief. All I can say is that your responsibility today is greater than that little business you control."

Mr. Tarbill had "How Scientific Service Saved My Bacon," as his subject and asked why "dealers have neglected service"?

"I firmly believe if we are to continue as new car merchants we must alter and improve our ideas of what service really is, and what the owner has a right to expect of us," said Mr. Tarbill.

"We must have men in our organization who view service work as more than a mere adjunct of our business. The new car dealer cannot have the same objective as the independent service operator. The new car dealer is, or should be, more concerned with what he can do to help his customers operate their cars at a minimum of expense, whereas the independent shop cares nothing about whether or not the customer will buy another new car of the same make.

"I did not take up scientific service and invest a considerable sum of money in equipment and building alterations actuated only by a desire to make profit from the investment. I did it primarily because I had to do it, because I realized that if I were to continue as a new car merchant I could not continue to dispense the old, primitive brand of service.

"I am frequently asked by both dealers who drop in to look over our service layout, how much it costs to maintain such a set-up, and when I tell them they measure the cost against the labor sales, forgetting to include parts and accessory sales to service department customers.

"Why should we neglect the service department which can make a percentage of net profit far greater than the new car department, even in its palmiest days? We must not look for tremendous profits in the service department, but rather set up our program with the side of new cars as our first and last thought."

OVER 45 MILLION AUTOMOBILES THROUGHOUT THE WORLD HAVE BEEN EQUIPPED WITH BENDIX PRODUCTS

PUSHING steadily toward new frontiers in the service of Transportation, Bendix ingenuity has helped make every motor car and truck at the Motor Show better in some one or more important respects.

This year in particular, the contributions of Bendix engineering to automotive progress have been significant indeed. The New and Improved Bendix Automatic Clutch Control . . . Bendix "Controlled" Power Brakes . . . the new — and long needed — Fast-Idle Carburetor — these are 1933 sensations which complement other very recent Bendix achievements.

Notably, Bendix Improved Automatic Choke Control and that invaluable sales-promoter, Bendix Startix, have already earned universal approval. Every automotive man is cordially invited to stop at the Bendix Motor Show exhibits and meet the Bendix Products and the Bendix men who are eager to serve you.

BENDIX AVIATION CORPORATION

CHICAGO • South Bend • NEW YORK

COWDREY BRAKE TESTER • LOCKHEED HYDRAULIC BRAKES • BENDIX AUTOMATIC CLUTCH CONTROL • AUTOMATIC CHOKE CONTROL
NERATORS • BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKES AND HORNS • ECLIPSE TEXTILE DEVICES • MORROW COASTER BRAKE
LIGHTING EQUIPMENT • PIONEER AIRCRAFT AND NAVIGATION INSTRUMENTS • DELCO IGNITION APPARATUS • AIRPLANE PROPELLERS

Retail Salesmen — This Is Your Page

This department is devoted to the interests of the retail sales division of the industry. Salesmen, this is your department. Automotive Daily News wants you to get something from this department that will help you in your work on the firing line. It wants you to pass on your own experiences, success, failures to help your brother salesmen. Send in your story in the form of a letter, or even a postal card, and let us get it ready for publication. Your achievement or your mistake may help another salesman to make sales or avoid errors that cost you commissions.

Dealers read this page. Give us the benefit of your reactions on these problems that affect the work of your salesmen, the men on the firing line, the men who bring home the bacon or don't.

HOW TO SELL FLEET OWNERS

By Morris R. Machol,
President Fleet Owner List Company.

There is a right way and a wrong way to go after anything, and a campaign to solicit business from fleet owners is no exception to this rule. Many are the manufacturers who will tell you that they have tried soliciting fleet business and, as a matter of policy, have given it up because there is nothing in it.

The real truth of the matter is that the solicitation of fleet business is a very profitable endeavor to the manufacturers of almost any kind of automotive product, providing it is intelligently and carefully planned and providing that this careful and intelligent plan is systematically and persistently followed.

Here is what often has happened. A manufacturer sees some statistics to the effect that 75 companies own 300,000 automotive vehicles, or he may learn that 25,000 companies own 1,700,000 vehicles. So he says to himself, "Well, we will go out and get ourselves a big slice of this very lucrative business." Then, either with or without the help of some advertising agency, a very nice circular broadside is prepared, possibly a series of two or three of them. Then it is found that the cheapest way to distribute that broadside is through some free circulation magazine which has acquired a list over a period of years and have kept it up to date almost entirely by a spasmodic questionnaire or the return of mail and by having their representative occasionally make a call on the fleet operator. Such a magazine can send out for the manufacturer perhaps 15,000 or 16,000 pieces of mail and they give him ample assurance that practically none of that mail will come back.

The total result is that the campaign of one, two or more circular pieces is a flop. There haven't been enough inquiries or orders to justify the expense.

On the other hand, there are some manufacturers in this country who are enjoying a very substantial and satisfactory amount of business from fleet operators. These manufacturers go after the field quite differently.

In the first place, they advertise in the Automotive Daily News and in the rest of the trade press, which reaches the fleet field. Then they go to the trouble of asking some questions before they buy a fleet owner list. They find out how authentic it is, how it is kept up to date, where the information comes from and what assurance they have that the information is accurate. They want to have what is to all intents and purposes a salesman's calling list because the mailing piece is effective only if followed up by the personal call of a salesman.

The type of list that is most effective and that will do the most toward making a salesman's time count is the list which is laid out in zones and routed so that a man can, with confidence, work from his list and know that he is always going to cover his prospects in the right order and that he will not waste time doubling on his tracks. Such a list will not only give the names of the company and their address, but it will show the name of the man who really is in charge of the automotive operations or, at least, who is a factor in the buying. Oftimes there are two or three men whose opinions are influential.

The kind of a list that is real is the kind of a list that a salesman would have, who had been for a long period covering territory and who was thoroughly acquainted with all of the prospects. Such a list is the kind that should be used for most effective direct mail results, because, in sending out direct mail, it is extremely important to reach the men who actually dictate and control purchasing policies.

After the mailing piece is planned and sent out with the aid of the right kind of a list it is not enough to just turn the list over to the salesman with a hearty "O. K., boys, shoot the works, and here's luck."

The wise manufacturer will put it up to his salesmen something like this:

We have decided to make a complete survey of the fleet field. We would like to have you set aside two days per week for this task, perhaps Tuesdays and Thursdays. If you have a ripe prospect, one who looks very imminent, either see him Monday or let him go till Wednesday, because Tuesday we would like you to devote yourself entirely to this survey.

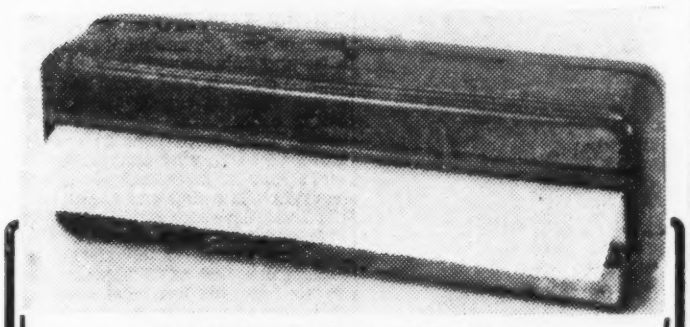
On this basis a man starts out and for that one day his outlook is quite different. He is meeting new people, specialists who know the business, and for whom he must put forth his best sales effort, he is making new acquaintances and his sales talk is very definitely technical and to the point. He don't talk about the weather or the election or football; or even the depression, he sticks strictly to business. And the next day, when he goes back to solicit business from his old friends and acquaintances, he will discover himself to be a better salesman because of this experience.

A single day, or even two days, out of a week for this cold turkey solicitation is stimulating. The strain of this sort of selling day after day is devastating. Plugging fleet business two days a week, the salesman will not lose any business that he would otherwise have secured. He will manage to get around and see his regular customers just the same. And, pegging away at his "fleet survey," steadily making from twenty to forty new calls each week, will result at the end of a few months in the appearance of a lot of new fleet accounts on the books.

The success of a campaign to secure fleet business, therefore, may be said to depend upon a systematic and co-ordinated plan of campaign involving the following factors:

1. Proper advertising in the right mediums.
2. The securing of an adequate, accurate and workable organized salesman's calling list.
3. The preparation and distribution of carefully planned and prepared direct mail material.
4. A series of follow-up calls by salesmen, planned to meet not only the educational needs of the prospect, but the capacities and best interests of the sales force.

NIBROC AUTO
TOWEL CABINET
fits under the dash



CONTAINS FIFTY (50) NIBROC WET STRENGTH PAPER TOWELS

Standard Equipment on Hudson and Essex Terraplanes

Approved and Recommended by Pierce-Arrow

Nibroc De Luxe washable wet strength paper towels are manufactured by a secret process which imparts to the paper great tensile strength and texture—when wet, almost as soft and smooth as chamois—washable, lintless, absorbent.

Uses: To clean hands, as a wiper for windshield, head lights, oil gauge, engine, and for polishing metal; napkins, handkerchiefs, etc.

Metal Cabinet 10¾x2¾x3⅝. List price cabinet, 75 cents; refill of 50 towels, 25 cents. We also manufacture a full line of cabinets and towels for garages, filling stations, waiting rooms, offices and homes.

Nibroc Towel Cabinets and towels were the outstanding accessory success at the New York Show, already handled by 600 distributors and leading jobbers.

Write us today for this 1933 money maker with constant refill repeat sales opportunities.

If at Chicago see us at Booth 49 Coliseum

BROWN COMPANY - - PORTLAND, MAINE

TRUCKERS ORGANIZE

Athens, Pa., Jan. 31.—Motor truck owners in Bradford county have organized the Bradford County Motor Truck Association, with Kenneth A. Harris of Athens as president. Other officers are Lewis Woodruff of Wysox, vice-president, and Charles Johnson of Columbia Cross Roads as secretary and treasurer.

Dealer Activities

NEWARK, N. J.

William Bernstein, formerly with Ike Kassel Company of Newark, has opened his own used car showroom at 990 Broad St.

* * *

Herbert C. Forsyth has taken the position as sales manager of the Herdman Motor Company, Inc., Chevrolet dealer. Mr. Forsyth has been in the automobile business thirteen years, during which time he filled various positions with the Studebaker Corporation of America, the Ira C. Jones Company, Studebaker distributors, and more recently the Pierce-Arrow Corporation of Newark.

* * *

George J. Hamberger, who has been connected with the De Cozen Motor Car Company for the last twelve years, is now with the Newark Buick Corporation, 199 Central Ave.

* * *

Max Yavner, used car dealer, of 372 Central Ave., has moved to 571 Central Ave.

* * *

Fisher Cadillac Corporation has been formed in Newark by Richard J. Congleton, Verling G. Enteman and Albert L. Wolfe, Newark.

GRAND RAPIDS, MICH.

Branches of Grand Rapids banks and the Automobile Club of Michigan are co-operating with the Department of State in sale of 1933 license plates.

* * *

New prospects are being secured by a number of Grand Rapids sales dealerships who are advertising they will attach 1933 license plates free.

* * *

ERIE, PA.

The Longnecker Motor Sales, headed by C. P. Longnecker, with salesroom and service station at 126 East 12th St., Pontiac distributor, has taken the Buick distributorship for northwestern Pennsylvania. The firm will continue sales and service of Pontiac cars.

* * *

DANBURY, CONN.

The Anderson-Nash Corporation, 82 West Street, has been appointed distributor of International trucks for Danbury and vicinity. The dealership has installed complete service facilities for the new line.

* * *

SPRINGFIELD, MASS.

The Tait Motor Sales, Inc., 611 Main St., has been appointed distributor for Graham in this territory.

Woman Dealer Shows Her Faith in Future, Doubles Service Facilities

Mrs. C. I. Fenton, Chevrolet dealer in West Springfield, Mass., who from small beginnings has built up one of the most successful dealerships in the Bay State, is celebrating the tenth anniversary of her affiliation with Chevrolet.

Appropriately at this time she announces the enlargement of her business quarters at 104 Westfield St. by the addition of a complete new service station, 65 by 100 feet, so that the plant is double its former size. She has also reorganized and increased the size of her sales and service staff, the latter to meet the demands of a "one-stop" service station that is prepared to service all makes of automobiles.

Starting as a used car dealer with a few cars, Mrs. Fenton's venture proved successful from the first and in November, 1922, she entered the ranks of a new car dealer and opened a Chevrolet dealership in a location in Elm Street. There she continued to increase her business and in five years she had outgrown those quarters. In May, 1927, she moved to the present location in Westfield Street, opening a new salesroom and service station and using a wooden building on the site for a used car department. A few months ago that building was torn down to make room for the new service department, which is a well lighted, roomy structure equipped to handle all kinds of service work on any make of car from front bumper to rear bumper. The used car department is now located in the rear of the salesroom, and there is also a room in that part of the building for metal work and painting.

Mrs. Fenton's organization includes fifteen men and women. She is its head as general manager, and her staff includes L. J. Fiore, sales manager; Frank Teagan, assistant manager; Arthur Hynes, manager of the used car department; Don Lee, service manager; Mrs. Lois Curtis, part manager; Miss Martha Egan, office manager, and James F. Coffey, in charge of lubrication and gasoline department.

Mr. Fiore came to Springfield in 1922, and was associated with his brother, O. H. Fiore of the Automobile Sales Company, leaving that organization to go with his brother into the Pioneer Motor Company. When that company closed out its business in 1930 Mr. Fiore returned to the Automobile Sales Company, where he remained until he joined the Fenton organization recently.

Don Lee, who was with the Western Massachusetts Cadillac Company in Springfield for a number of years before it went out of business, was with the Cadillac branch in New York for ten years, where he was employed in the service, technical and mechanical ends of the business, taking part in much experimental work.

Mrs. Fenton's enterprise, even in the face of unfavorable conditions, is noteworthy, for in addition to the enlargement of the plant in West Springfield, she recently acquired the Chevrolet dealership in Westfield, which is now under the management of her husband, W. H. Fenton.

Mrs. Fenton is optimistic and has organized her business to meet the situation, and believes there is business to be obtained, and she is going after it.

DRAPER FINDS CHANGE IN BUYER'S PREFERENCES

Montreal, Que., Jan. 31.—"A marked change in the trend of public automobile buying is evident this year," J. S. Draper, sales manager of the Hudson-Essex of Canada, Limited, declared on arrival here. He explained that in 1932 about 84 per cent. of the buying was in the lower-priced bracket, but this year there were prospects of increased buying of higher-priced cars.

Another factor, all the more surprising on account of the depression, is that many customers are willing to pay for special features, such as specially lacquered fenders, automatic clutches and so on.

UTAH MEASURE PROVIDES COMPULSORY INSURANCE

Salt Lake City, Utah, Jan. 31.—A bill to compel automobile owners to take out liability insurance has been introduced in the Utah State Legislature. The bill provides that the law goes into effect January 1 next year and that the application for a license be accompanied by an application for insurance.

JERSEY CITY SHOW CROWD, SALES, UP

Jersey City, N. J., Jan. 31.—Automobile dealers of Hudson County are happy over the success of the annual Jersey City Automobile Show, as its effect were noticeable in increased sales. The show closed with a din that deafened many visitors for a time, as every automobile horn in the midtown solon was blown.

The celebration was short, but no less spirited for all its brevity.

The week's attendance totaled 55,000, a gain over last year of 12,000. Sales were reported as 181, with Chevrolet leading.

Frank Galland, manager of the show, in co-operation with Walter Lightfoot of Jersey City Storage Battery Company, awarded a number of ribbons to dealers for having elaborate decorations.

Impromptu dinners followed the closing of the show, with various dealers taking their sales staffs to nearby dining places. Charles Holsey, Chevrolet dealer, was delighted with his record, that of having the greatest number of sales, for which he exhibited one of the many ribbons presented by Lightfoot, and a celebration followed for the Chevrolet exhibitors.

Among those who attended the closing night's showing were State Senator Edward Stout, Theodore Seltzer, honorary president of the North Hudson Boy Scout Council, and Edward Flaherty, deputy commissioner of public safety.

In less than an hour after the exhibits were driven off the floor, decorations, special lighting, equipment and other apparatus for the show had been removed.

GEORGIA BILL PROTECTS AGAINST CAR PILFERING

Atlanta, Ga., Jan. 31 (UTPS).—The House of Representatives of the Georgia legislature has passed a measure making it a felony to break into automobiles by the vote of 128 to 2. The measure puts automobiles in the same classification as houses, making breaking into them punishable by from one to five years imprisonment.

FINANCIAL NEWS

AUBURN

Auburn, Ind., Jan. 31.—Auburn automobile, for the year ended November 30, 1932, reports net sales of $12,845,353, comparing with sales of $37,086,489 in 1931. After deduction of costs and expenses, operating loss, other expense, Federal taxes, minority interest, deficit amounted to $1,810,182, compared with profit of $2,755,844 in the preceding year.

DEVOE & RAYNOLDS

New York, Jan. 31.—Devoe & Raynolds Company, Inc., and subsidiaries, for the year ended November 30, report net income of $21,765 after depreciation, interest and taxes, equivalent to $1.62 a share on 13,414 shares of 7 per cent. first preferred stock. This compares with net income in the preceding fiscal year of $334,590, equivalent after dividends paid on 7 per cent. first and second preferred stocks to $1.12 a share on combined 110,000 no-par shares of class A and 40,000 no-par class B common shares.

DEFIANCE SPARK PLUG

New York, Jan. 31.—Defiance Spark Plugs, Inc., and subsidiaries, for the year ended November 30, report net loss of $11,672, against net income before Federal taxes, of $136,344, equal to $2.03 a share on 67,132 capital shares, the year before.

BASTIAN-BLESSING

Chicago, Jan. 31.—E. E. Thompson, H. I. Markham and L. D. Ely have been elected directors of Bastian-Blessing Company, Chicago, replacing E. L. Mills and John Evans, and filling a vacancy on the board. All officers were re-elected excepting C. J. Palmer, who has been made vice-president of the Russ Soda Fountain Company, a recently acquired subsidiary.

DU PONT

Wilmington, Del., Jan. 31.—The detailed report of E. I. du Pont de Nemours & Co. for 1932, issued yesterday, shows earnings applicable to common stock of $19,769,395, or $1.82 a share on 10,867,678 average shares outstanding, compared with $47,216,932, or $4.29 a share for 1931, on 11,008,512 average shares outstanding. Figures for both years include du Pont's equity in undivided profits or losses of controlled companies not consolidated.

TRUCKERS FIGHT TON-MILE TAX IN NORTH CAROLINA

Raleigh, N. C., Jan. 31.—J. L. Wilkinson, president of the North Carolina Truck Owners' Association, appeared before the joint committee on roads and protested against passage of the Moore bill, which would levy a ton-mileage tax. The bill would strangle the motor vehicle industry, Mr. Wilkinson said.

H. P. Brawner of Raleigh, representing bus interests, declared the bill would raise bus taxes by 50 per cent. on the present franchise tax. Such tax would curtail service, he said. Immediately after conclusion of the hearing, Senator Kirkpatrick of Mecklenburg, moved that the bill be unfavorably reported. He withdrew the motion, however, so that sponsors could be given hearing.

CURRENT PRICES OF PASSENGER CAR MODELS

AUBURN—8-cyl. 127 W. B.
Standard Models

2 Coupe	745	5 Cabriolet	895
5 Brougham	795	5 Phaeton	945
5 Sedan	845	7 Sed. (136 W. B.)	945

AUBURN—8-cyl. 127 W. B.
Custom Dual Ratio

2 Coupe	895	5 Phaeton	1095
5 Brougham	945	Speedster	1095
5 Sedan	995	7 Sed. (136 W. B.)	1095
5 Cabriolet	1045		

AUBURN—8-cyl. 127 W. B.
De Luxe Dual Ratio Models

2 Coupe	895	5 Phaeton	1095
5 Brougham	945	Speedster	1095
5 Sedan	995	7 Sed. (136 W. B.)	1095
5 Cabriolet	1045		

AUBURN—8-cyl. 127 W. B.
Salon Models

5 Brougham	1,195	5 Phaeton	1,345
5 Sedan	1,245	Speedster	1,345
5 Cabriolet	1,295		

AUBURN—12-cyl. 127 W. B.
Salon Models

5 Brougham	1,695	5 Phaeton	1,845
5 Sedan	1,745	Speedster	1,845
5 Cabriolet	1,795		

AUBURN—12-cyl. 133 W. B.
Standard Models

2 Coupe	1145	5 Sedan	1245
5 Brougham	1195		

AUBURN—12-cyl. 133 W. B.
Custom Dual Ratio Models

2 Coupe	1295	5 Cabriolet	1445
5 Brougham	1345	5 Phaeton	1495
5 Sedan	1395	Speedster	1495

AUBURN—12-cyl. 133 W. B.
Custom De Luxe Dual Ratio Models

2 Coupe	1295	5 Cabriolet	1445
5 Brougham	1345	5 Phaeton	1495
5 Sedan	1395	Speedster	1495

AUSTIN—4-cyl. 75 W. B.

Business Coupe	275	Roadster	305
Spl. Business Coupe	295	Coupe	315
		Sub. Coupe	375

BUICK—33-50 Series. 119 W. B.

2 Coupe	995	5 Coupe	1,065
Special Coupe	1,030	Con. Coupe	1,115
Sedan	1,043		

BUICK—33-60 Series. 127 W. B.

Special Coupe	1,273	Con. Coupe	1,365
Sedan	1,310	Con. Phaeton	1,585
5 Coupe	1,310		

BUICK—38-80 Series. 130 W. B.

Sport Coupe	1,495	Con. Coupe	1,575
5 Coupe	1,540	Con. Phaeton	1,845
Sedan	1,570		

BUICK—33-90 Series. 138 W. B.

5 Coupe	1,785	7 Sedan	1,955
5 Sedan	1,805	7 Limousine	2,055
5 Cl. Cpl. Sedan	1,820		

CADILLAC V-8—8-cyl. 134 W. B.
Series 355-C. Body by Fisher

2 Coupe	2,695	2 Conv. Coupe	2,845
2 Roadster	2,795		

CADILLAC V-8—8-cyl. 140 W. B.
Body by Fisher

5 Sedan	2,895	7 Sedan	3,045
5 Phaeton	2,895	7 Imperial	3,195
5 Coupe	2,895	5 A.W. Phaeton	3,395
5 Town Sedan	2,995		

CADILLAC V-8—8-cyl. 140 W. B.
Body by Fleetwood

5 Sedan	3,295	5 Town Cab.	3,995
7 Sedan	3,445	7 Town Cab.	4,145
7 Limousine	3,645	7 Lim. Brough.	4,145

CADILLAC V-12—12-cyl. 134 W. B.
Series 370-C. Body by Fisher

2 Coupe	3,395	2 Conv. Coupe	3,545
2 Roadster	3,495		

CADILLAC V-12. 12-cyl. 140 W. B.
Body by Fisher

5 Sedan	3,895	7 Sedan	3,745
5 Phaeton	3,595	7 Imperial	3,895
5 Coupe	3,595	5 A.W. Phaeton	4,095
5 Town Sedan	3,695		

CADILLAC V-12. 12-cyl. 140 W. B.
Body by Fleetwood

5 Sedan	3,995	5 Town Cab.	4,695
7 Sedan	4,145	7 Town Cab.	4,845
7 Limousine	4,345	7 Lim. Brough.	4,845

CADILLAC V-16—16-cyl. 149 W. B.
Series 452-C. Body by Fleetwood

5 Sedan	6,250	Town Cabriolet	
7 Sedan	6,400	(Opera Seats)	6,850
7 Limousine	6,600	Town Cabriolet	6,850
		7 Lim. Brough.	6,850

CHEVROLET—6-cyl. 110 W. B.

Sport Roadster	465	Sport Coupe	535
Coupe	495	Sedan	565
Coach	515	Cabriolet	565
Phaeton	515		

CHRYSLER—6-cyl. 117 W. B.

2 Business Coupe	795	5 Sedan	845
4 Brougham	795	4 Con. Coupe	885
4 Coupe (R.S.)	835	5 Con. Sedan	1,055

CHRYSLER—8-cyl. 120 W. B.
Royal Eight Models

2 Business Coupe	945	4 Con. Coupe	1,035
2-4 Coupe (R.S.)	985	5 Con. Sedan	1,195
5 Sedan	995		

CHRYSLER—8-cyl. 126 W. B.
Imperial Eight Models

2-4 Coupe (R.S.)	1,355	Con. Coupe	1,425
5 Coupe	1,395	Con. Sedan	1,505
5 Sedan	1,395		

CHRYSLER—8-cyl. 146 W. B.
Custom Imperial

5 Cl. Cpl. Sedan	2,895	Con. Cp. Road	3,295
7 Sedan	2,995	5 Phaeton	3,395
7 Sed. Limous.	3,295		

CONTINENTAL—4-cyl. 101½ W. B.
Beacon Models

2 Roadster	355	2-dr. Sedan	380
Coupe	380	4-dr. Sedan	395

CONTINENTAL—6-cyl. 107 W. B.
Flyer Models

Roadster	450	2-dr. Sedan	510
Coupe	490	4-dr. Sedan	535

CONTINENTAL—6-cyl. 111 W. B.
Ace Models

Coupe (R.S.)	725	De Luxe Sedan	815
Stand. Sedan	745		

CORD—8-cyl. 137½ W. B.

Sedan	2,395	Cabriolet	2,495
Brougham	2,395	Phaeton Sedan	2,595

DE SOTO—6 cyl. 114¾ W. B.
Standard Models

2 Business Coupe	695	2-4 Coupe (R. S.)	735
5 Brougham	695	5 4-dr. Sedan	765

DE SOTO—6 cyl. 114¾ W. B.
Custom Models

5 Spl. Brougham	725	2-4 Con. Coupe (R. S.)	845
5 Sedan	835	5 Con. Sedan	975

DODGE—6 cyl. 111½ W. B.
D. P. Models

2 Business Coupe (5 Dem. wood wheels, R. M.)	595	2-4 Coupe (R. S.) (5 chrome steel spoke wheels, 1 F. W.)	679
2 Business Coupe (5 wire wheels, R. M.)	595	2-4 Con. Coupe (5 dem. wood wheels, R. M.)	695
2 Business Coupe (5 chrome steel spoke wheels, R. M.)	620	2-4 Con. Coupe (5 wire wheels R. M.)	695
5 wire wheels,		5 Sedan (5 chrome steel spoke wheels, R. M.)	695
2-4 Coupe (R. S.) (5 Dem. wood wheels, R. M.)	640	5 Sedan (6 dem. wod wheels, 2 F. W.)	711
2-4 Coupe (R. S.) (5 wire wheels, R. M.)	640	5 Sedan (6 wire wheels, 2 F. W.)	711
5 Salon Broug.	660	2-4 Con. Coupe 6 wire wheels, 2 F. W.)	726
2-4 Coupe (R. S.) (6 wire wheels, 2 F. W.)	670	5 De L. Salon Brougham (6 chrome steel spoke wheels, 2 F. W.)	775
5 Sedan (5 Dem. wood wheels, R. M.)	670		
5 Sedan (5 wire wheels, R. M.)	670		

DODGE—8 cyl. 122 W. B.
D. O. Models

2-4 Coupe (R. S.) (5 dem. wood wheels, R. M.)	1115	5 Sedan (6 dem. wood wheels, 2 F. W.)	1180
5 Coupe (5 dem. wood wheels, R. M.)	1145	2-4 Con. Coupe (5 dem. wood wheels, R. M.)	1185
5 Sedan (5 dem. wood wheels, R. M.)	1145		

ESSEX—6-cyl. 106 W. B.
Terraplane Standard Models

2 Roadster	425	4 Coupe (R.S.)	545
2 Coupe	495	5 Sedan	565
5 Coach	515		

ESSEX—6-cyl. 106 W. B.
Terraplane Special Models

4 Roadster	525	5 Sedan	605
5 Coach	555	4 Conv. Coupe	605
4 Coupe (R.S.)	560		

ESSEX—8-cyl. 113 W. B.
Terraplane Eight Models

2 Coupe	645	5 Sedan	725
5 Coach	650	4 Conv. Coupe	725
4 Coupe (R.S.)	685		

FRANKLIN—6-cyl. 118 W. B.
Olympic Models—Series 18

5 Sedan	1,385	4 Conv. Coupe	1,500
2 Coupe	1,385		

FRANKLIN—6-cyl. 132 W. B.
Series 16

5 Sedan	1935	Conv. Coupe	2,300
Club Sedan	1985	Victoria Brough.	2,445
7 Sedan	2135	Limousine	3,095
Coupe	2,345		

FRANKLIN—12 cyl. 144 W. B.
Series 17

5 Sedan	2,685	7 Sedan	2,985
5 Club Brough.	2,885	7 Limousine	3,185

FORD—V-8, 106 W. B.

Roadster	460	De Luxe Coupe	575
Coupe	490	Fordor Sedan	590
Phaeton	495	Victoria	600
Tudor Sedan	500	Cabriolet	610
De L. Roadster	500	De Luxe Fordor	
Sport Coupe	535	Sedan	645
De L. Phaeton	545	Con. Sedan	650
De L. Tudor Sed.	550		

FORD—4-cyl. 106 W. B.

Roadster	410	De Luxe Coupe	525
Coupe	440	Fordor Sedan	540
Phaeton	445	Victoria	550
Tudor Sedan	450	Cabriolet	560
De L. Roadster	450	De Luxe Fordor	
Sport Coupe	485	Sedan	595
De L. Phaeton	495	Con. Sedan	600
De Luxe Tudor Sedan	500		

GRAHAM—6-cyl. 185 O. A.*
Standard Models

2 Coupe	745	5 Sedan	795
4 Coupe (R.S.)	795	4 Conv. Coupe	835

GRAHAM—8-cyl. 191 O. A.*
Standard Models

2 Coupe	845	5 Sedan	895
4 Coupe (R.S.)	895	4 Con. Coupe	935

GRAHAM—8-cyl. 195 O. A.*
Custom Models

2 Coupe	1,045	5 Sedan	1,095
4 Coupe (R.S.)	1,095		

HUDSON—6-cyl. 113 W. B.
Super-Six Models

Business Coupe	765	5 Phaeton	835
Coach	795	Sedan	865
Coupe (R.S.)	815	Conv. Coupe	915

HUDSON—8-cyl. 119 W. B.
Standard Eight

Coach	1,075	Sedan	1,145
4 Coupe	1,095	Conv. Coupe	1,245

HUDSON—8-cyl. 132 W. B.
Major Eight Models

5 4-dr. Touring Sedan	1,395	Club Sedan	1,495
Brougham	1,495	7 Sedan	1,495

HUPMOBILE—6-cyl. 121 W. B.

5 Sedan	995	Victoria	1,060
2-4 Coupe (R.S.)	1,095	Cabriolet	1,095

HUPMOBILE—8-cyl. 122 W. B.

Coupe	1,195	Victoria	1,260
5 Sedan	1,195	Cabriolet	1,295

HUPMOBILE—8-cyl. 126 W. B.

5 Sedan	1,445	Victoria	1,510
Coupe	1,445	Cabriolet	1,545

LA SALLE V-8—8-cyl. 130 W. B.
Series 345-C. Body by Fisher

5 Sedan	2,245	2 Conv. Coupe	2,395
2 Coupe	2,345	5 Town Coupe	2,395

LA SALLE V-8—8-cyl. 136 W. B.
Body by Fisher

5 Town Sedan	2,495	7 Imperial	2,645
7 Sedan	2,495		

LINCOLN V-12—12-cyl. 136 W. B.

Open Road	2,700	5 Coupe	3,200
Open Road (R.S.)	2,745	Phaeton (With ton. cowl and windshield)	3,200
Phaeton	3,000	7 Touring	3,200
2 Coupe	3,100	7 Sedan	3,300
Town Sedan	3,100	7 Limousine	3,350
2 Coupe (R.S.)	3,145		
Con Road (R.S.)	3,200		
5 Sedan	3,300		

LINCOLN—V-12—12-cyl. 145 W. B.

Phaeton	4,200	Berline (2 windows) (Judkins)	5,500
7 Touring	4,300	Berlin (3 windows) (Judkins)	5,500
5 Coupe	4,300	Con. Coupe (Brunn)	5,700
Phaeton(Tonneau cowl and windshield)	4,400	Limousine (Willoughby)	5,700
Town Sedan (2 windows)	4,400	Sed. Limousine (Judkins)	5,800
Town Sedan (3 windows)	4,400	Con. Sedan (Deitrich)	6,100
5 Sedan	4,500	Non.-Col. Cabriolet (Brunn)	6,900
Con. Road (R.S.) (Le Baron)	4,500	Semi-Col. Cabriolet (Brunn)	6,900
7 Sedan	4,600	Brougham (Brunn)	6,900
7 Limousine (With drop partition)	4,800	Pan. Brougham (Willoughby)	7,000
2 Coupe (Dietrich)	4,900		
Coupe (Judkins)	5,000		

NASH—6-cyl. 116 W. B.
Big Six Models

5 4-dr.-4-Window Sedan	695	2-4 Coupe (R.S.)	748
2 Coupe	725	5 4-dr.-6-Window Sedan	745

NASH—6-cyl. 116 W. B.
Standard Eight Models

2 Coupe	830	5 4-dr.-6-Window Sedan	845
5 4-dr.-4-Window Sedan	830	2-4 Coupe (R.S.)	845
		2-4 Conv. Road	900

NASH—8-cyl. 121 W. B.
Special Eight Models

2 Coupe	965	2-4 Coupe (R.S.)	1,015
5 4-dr.-4-Window Town Sedan	975	2-4 Con. Road	1,055
5 4-dr.-6-Window Sedan	1,015	5 2-dr. Conv. Sedan	1,095

NASH—8-cyl. 128 W. B.
Advanced Twin Ignition Eight Models

2 Coupe	1,255	2-4 Conv. Road	1,395
2-4 Coupe (R.S.)	1,275	5 Victoria	1,395
5 4-dr.-6-Window Sedan	1,320	5 4-dr. Con Sedan	1,575

NASH—8-cyl. 133-142 W. B.
Ambassador Twin Ignition Models

2-4 Coupe (R.S.)	1,545	5 4-dr.-4-Window Brougham	1,620
5 4-dr.-6-Window Sedan	1,575	5 4-dr. Conv. Sedan	1,675
2-4 Conv. Road	1,645	Sedan	1,875
5 Victoria	1,765	7 4-dr. Sedan	1,955
5 4-dr.-6-Window Sedan	1,855	7 4-dr. Limou.	2,055

OLDSMOBILE—6-cyl. 115 W. B.

Business Coupe	745	5 Sedan	825
5 Coupe	745	Conv. Coupe	825
Touring Coupe	775	Touring Sedan	855
Sport Coupe	780		

OLDSMOBILE—8-cyl. 119 W. B.

Business Coupe	845	5 Sedan	925
5 Coupe	845	Conv. Coupe	925
Touring Coupe	875	Touring Sedan	955
Sport Coupe	880		

PACKARD—8-cyl. 127½ W. B.

5 Sedan	2,150	Coupe Sedan	2,190
2 Coupe	2,160	Coupe Roadster	2,250

PACKARD—8-cyl. 136 W. B.

2 Coupe	2,350	5 Coupe	2,440
5 Phaeton	2,370	7 Sedan	2,455
5 Sedan	2,385	7 Limousine	2,550
Club Sedan	2,390	Con. Victoria	2,780
5 Touring	2,390	Con. Sedan	2,890

PACKARD—8-cyl. 135 W. B.
Super Eight Model

5 Sedan	2,750		

PACKARD—8-cyl. 142 W. B.
Super Eight Models

2 Coupe	2,780	7 Sedan	3,090
Coupe Road	2,870	5 Spt. Phaeton	3,150
5 Phaeton	2,890	7 Limousine	3,280
Club Sedan	2,975	Conv. Victoria	3,440
5 Coupe	2,980	Conv. Sedan	3,590
5 Tourer	2,980		

PACKARD—12-cyl. 142 W. B.

2 Coupe	3,720	5 Coupe	3,890
5 Phaeton	3,790	Spt. Phaeton	4,090
Coupe Roadster	3,850	Conv. Victoria	4,490
5 Sedan	3,860	Conv. Sedan	4,650
Club Sedan	3,880		

PACKARD—12-cyl. 147 W. B.

7 Sedan	4,085	7 Limousine	4,285

PACKARD—12-cyl. 147 W. B.
Custom Models

Spt. Phaeton (Dietrich)	5875	Con. Sedan (Dietrich)	6570
Sta. Coupe (Dietrich)	6000	Formal Sedan (Dietrich)	7000
Con. Victoria (Dietrich)	6070	A. W. Cabriolet (Le Baron)	7000
Con. Runabout (Dietrich)	6085	A. W. Town Car (Le Baron)	7000

PIERCE-ARROW—8-cyl. 136 W. B
Standard Models

2 Club Brougham (Trunk on rear)	2385	5 Sedan	2575
		5 Club Sedan	2565

PIERCE-ARROW—8-cyl. 139 W. B.
Standard Models

7 Sedan	2859	7 En. Dr. lim.	2978

PIERCE-ARROW—8-cyl. 136 W. B.
Salon Models

Club Brougham (Trunk on rear)	2550	5 Sedan	2746
		5 Club Sedan	2860

PIERCE-ARROW—8-cyl. 139 W. B.
Salon Models

7 Sedan	3015	7 En. Dr. Lim.	3140

PIERCE-ARROW—12-cyl. 136 W. B.
1236 Standard Models

5 Club Brougham (Trunk on rear)	2795	5 Sedan	2975
		5 Club Sedan	3095

PIERCE-ARROW—12-cyl. 139 W. B.
1236 Standard Models

7 Sedan	3250	7 En. Dr. Lim.	3375

PIERCE-ARROW—12-cyl. 137 W. B.
1242 Custom Models

5 Club Brougham (Trunk on rear)	3650	5 Tourer	3950
5 Sedan	3785	5 Spt. Phaeton (Ton. Windscr'n)	4150
2-4 Coupe (R. S.)	3785	5 Club Berline (Trunk on rear)	4150
Con. Coupe Rdr. (R. S.)	3900	5 Con. Sedan	
5 Club Sedan (Trunk on rear)	3950	(Trunk on rear)	4270

PIERCE-ARROW—12-cyl. 142 W. B.
1242 Custom Models

7 Sedan	3985	7 Tourer	4250
7 En. Dr. Lim.	4250		

PIERCE-ARROW—12-cyl. 142 W. B.
1247 Custom Models

5 Sedan	4295	5 Club Berline (Trunk on rear)	4600
5 Club Sedan (Trunk on rear)	4460		

PIERCE-ARROW—12-cyl. 147 W. B.
1247 Custom Models

7 Sedan	4535	Town Bro'm (Small Quarter Windows, Brunn)	6700
7 En. Dr. Lim.	4600	Town Bro'm (Large Quarter Windows, Brunn)	6700
Con. Victoria (Le Baron)	5200	"Town Car (Stationary rear quarter, Brunn)	6700
Coupe (Metal Back, Le Baron)	5300	Town Cab'let (Collapsible rear quarter, Brunn)	7200
Coupe (Leather Back, Le Baron)	5600	En. Dr. Bro'm (Limousine Front, Brunn)	7300
Club Sedan (Le Baron)	5700		
Con. Sedan (Le Baron)	5700		
Con. Sed. with partition (Le Baron)	6100		
En. Dr. Limousine (Le Baron)	6200		

PLYMOUTH—6-cyl. 107 W. B

2 Stan. Coupe	495	5 Sedan	545
2-4 Spl. Coupe (R.S.)	545	2-4 Con. Coupe	565

PONTIAC—8-cyl. 115 W. B.

2 Roadster	585	2-dr. Trav. Coupe	675
5 2-dr. Sedan	635	2-4 Con. Coupe	695
2 Stan. Coupe	635	4 dr. Sedan	695
4 Coupe (R.S.)	670		

REO—6-cyl. 112½ W. B.
Flying Cloud Models

Stan. Sedan	995	Elite Sedan	1090
Stan. Coupe	995	Elite Coupe	1090
St. Con Coupe	1045	Elite Con. Coupe	1140

REO—8-cyl. 131 W. B.
Royale Models

Stan. Sedan	1745	Elite Sedan	1845
Stan. Victoria	1745	Elite Victoria	1845
Stan. Coupe	1715	Elite Coupe	1845

ROCKNE—6-cyl. 110 W. B.
Standard Models

5 Coach	585	4 Coupe	620
2 Coupe	585	4 Conv. Road	675
5 Sedan	615	5 Conv. Sedan	695

ROCKNE—6-cyl. 110 W. B.
De Luxe Models

5 Coach	630	4 Coupe	665
2 Coupe	630	4 Conv. Road	720
5 Sedan	660	5 Conv. Sedan	740

STUDEBAKER—6-cyl. 117 W. B.
Standard Models

2 Pass. Coupe	865	5 St. Regis	
4-Pass. Coupe	915	Brougham	940
5 Sedan	940	5 Conv. Sedan	1,040
4 Conv. Road	940		

STUDEBAKER—6-cyl. 117 W.B.
Regal Models

2 Pass. Coupe	970	5 St. Regis	
4 Pass. Coupe	1,020	Brougham	1,045
5 Sedan	1,045	5 Conv. Sedan	1,145
4 Conv. Road.	1,045		

STUDEBAKER—8-cyl. 117 W. B.
Commander Standard Models

2 Pass. Coupe	1,025	5 St. Regis	
4-Pass. Coupe	1,075	Brougham	1,100
5 Sedan	1,100	5 Conv. Sedan	1,220
5 Conv. Road.	1,120		

STUDEBAKER—8-cyl. 117 W. B.
Commander Regal Models

2 Pass. Coupe	1,130	5 St. Regis	
4 Pass Coupe	1,180	Brougham	1,205
5 Sedan	1,205	5 Conv. Sedan	1,325
4 Conv. Road.	1,225		

STUDEBAKER—8-cyl. 125 W. B.
President Standard Models

4 Pass. Coupe	1,355	5 St. Regis	
5 Sedan	1,415	Brougham	1,415
4 Conv. Road.	1,415	5 Conv. Sedan	1,575

STUDEBAKER—8-cyl. 125 W. B.
President State Models

4 Pass. Coupe	1,460	5 St. Regis	
5 Sedan	1,520	Brougham	1,520
4 Conv. Road	1,520	5 Conv. Sedan	1,680

STUDEBAKER—8-cyl. 133 W. B.
President Speedway Models

4 Pass. Coupe	1,655	4 Conv. Road	1,715
5 Sedan	1,715	7 Sedan	1,865
5 St. Regis		5 Conv. Sedan	1,885
Brougham	1,715	Limousine	1,965

STUDEBAKER—8-cyl. 135 W. B.
President Speedway State Models

4 Coupe	1,760	4 Conv. Road	1,820
5 Sedan	1,820	7 Sedan	1,970
5 St. Regis		5 Conv. Sedan	1,990
Brougham	1,820	Limousine	2,070

STUTZ—6-cyl. 127½ W. B.
LAA Models

5 Coupe	1995	5 Club Sedan	1995
5 Sedan	1995	Cabriolet Coupe	2285
2 Coupe	1995		

STUTZ—8-cyl. 134½ W. B.
SV-16 Challenger Series

5 Coupe	2495	2 Speedster	2880
5 Sedan	2780	Cabriolet Coupe	2880
2 Coupe	2780	Torpedo Sp'dster	2980
Club Sedan	2880		

STUTZ—8-cyl. 145 W. B.
SV-16 Challenger Series

7 Sedan	3245	Cabriolet Coupe	3445
7 Limousine	3445	5 Conv. Sedan	3495

FISHLEIGH URGES REVISION IN CAR DESIGN

(Continued from Page 6)

will predict how Dame Fashion will receive the first full streamlined engine-at-the-rear models. They forget how easily we pass from long skirts to short skirts, then back again to long skirts; and from picture hats to skull caps, then back to picture hats, without either mechanical or functional advantages, so far as the average taxpayer can discover. They forget also that, with proper study, it is possible to incorporate beauty of line and form in full streamlined cars, which is not possible with the present arrangement.

It is not difficult to discover these general notions about streamlining and engines at the rear, but it is difficult to find an automotive engineer who has studied the problem all the way through and therefore appreciates the sum total of possible improvements, not only in air resistance, fuel economy and high speed, but in improved acceleration and "pep," hill climbing ability, clear vision, riding comfort, beauty and grace. Seldom, if ever, has such opportunity for composite improvement in a single design been discoverable. No job immediately ahead of automobile engineers is more important than a thorough analysis of the characteristics and possibilities of streamlined cars, in order therefrom to determine whether present standardized forms should be retained or discarded.

The basic advantage of the streamlined or "tear-drop" car over that of the conventional sedan comes from its greatly reduced air resistance, which, at speeds above thirty miles per hour, is the major part of the total car resistance against which driving power must be exerted. The upper curve in Fig. 2 indicates the total car resistance, in pounds, of a conventional sedan at various speeds up to ninety miles per hour, and the lower curve indicates corresponding values for a tear-drop car. The total resistance of a conventional sedan is substantially double that of the tear-drop design.

In respect to miles per gallon of fuel, Fig. 3 shows that, at normal or high touring speeds, the miles per gallon of fuel for the tear-drop car are double those for the conventional sedan. At a fifty-mile per hour car speed, the tear-drop car will travel thirty miles per gallon of gasoline against sixteen miles per gallon for the conventional sedan.

Assuming that we install the same engine and the same 4:1 gear ratio in the tear-drop car that we have in a conventional sedan, the maximum speed of the tear-drop car will be 98 m. p. h., as compared with 79 m. p. h. for the conventional sedan, an increase of approximately 25 per cent. This is graphically illustrated in Fig. 4, wherein the upper curve shows the engine power available for driving at the rear wheels, the center curve shows the power required to drive a conventional sedan on a level road and the lower curve shows the power required to drive a tear drop-car on a level road.

Acceleration is increasingly important in these days of heavy traffic and high touring speeds and stop lights. Both in starting from a standstill and in passing other vehicles up the highway, acceleration improves the car's average time. Acceleration, as well as hill climbing ability, depends on three factors; the horsepower available, the weight of the car and the total car resistance; that is, rolling resistance plus air resistance.

Fig. 5 depicts by shaded vertical ordinates the excess horsepower available at different speeds over and above that necessary for driving a conventional sedan and a tear-drop car, such excess horsepower being available for acceleration or hill-climbing or both. Thus the ordinates between the upper curve of horsepower available at the rear wheels and the central curve of horsepower required to drive a conventional sedan can be directly compared with corresponding ordinates between the upper curve and the lower curve of horsepower required to drive a tear-drop car. At speeds above 10 m. p. h., as shown, the horsepower available for acceleration and hill-climbing becomes increasingly greater for the tear-drop car, in both absolute values and proportionately. At 79 m. p. h., the maximum speed of the conventional sedan, no acceleration or hill-climbing is possible in this car, because all the power is being used in driving the car, whereas some 40 horsepower is available in the tear-drop car.

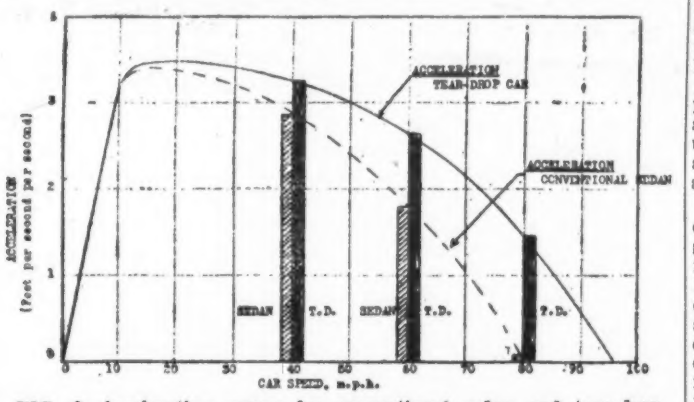


FIG. 6—Acceleration curves for conventional sedan and tear-drop car at various speeds. (Same engine and 4 to 1 gear ratio)

The real picture of improved acceleration and hill-climbing ability in the tear-drop car over that of a corresponding conventional sedan is obtained when we calculate the actual values for acceleration possible because of excess available horsepower at the various speeds, and the grades which can be taken. In Fig. 6, two curves have been plotted to show as ordinates the possible acceleration in feet per second at different car speeds, the upper curve being for the tear-drop and the lower dash-line curve for a conventional sedan.

At all speeds above 10 m. p. h acceleration for the tear-drop car is greater than that for a corresponding conventional sedan, the same being increasingly greater as the car speeds increase. At 40 m. p. h., as the heavy-shaded ordinates indicate, acceleration for the tear-drop car is 13 per cent. greater than that for a conventional sedan; at 50, it is 50 per cent. greater. At a 75 m. p. h. car speed, the acceleration curve for the conventional sedan crosses the base line, and indicates zero acceleration or maximum speed; whereas, at this same speed, an acceleration of 1.5 ft. per sec, per sec. is possible with the tear-drop sedan.

Maximum grades that can be climbed at different speeds are shown in Fig. 7. The upper curve shows grades in per cent, for the tear-drop car, the lower curve for a conventional sedan. The superiority of the tear-drop car over the conventional sedan is obvious. The advantage in hill-climbing ability is increasingly greater for the tear-drop car as the car speeds increase. The heavy-shaded ordinates emphasize an advantage of 13 per cent. at 40 m. p. h.; of 50 per cent at 60 m. p. h., and a reserve hill-climbing ability equal to a 4 per cent. grade for the tear-drop car at 79 m. p. h., which is the maximum speed for the conventional sedan, and where any grade will force slowing down.

The foregoing discussion of comparative operating advantages is based on the use of the same conventional engine in both the conventional sedan and the tear-drop car and the same conventional 4:1 gear ratio. By keeping the same engine, a change in gear ratio in the tear-drop car could be made to bring about important changes in performance characteristics, both absolutely and comparatively. Fig. 8 illustrates characteristically the changes which result in the conventional sedan and in a tear-drop car, where the engine is kept the same but two different rear axle gear ratios are used, 4:1 and 3:1. Considering first the conventional sedan, it is evident from the curves that change to a 31 gear ratio reduces the maximum possible car speed slightly, from 79 to 77 m. p. h., and seriously reduces the extra horsepower available for acceleration and hill climbing at all speeds. This reduction amounts to approximately 30 per cent. at 30 m. p. h., 35 per cent. at 50 m. p. h. and 50 per cent. at 70 m. p. h. The change is clearly not desirable. For the tear-drop car the change from 4.1 gear ratio to a ratio of 3:1 increases its maximum speed from 98 to 108 m. p. h., but at a sacrifice of extra horsepower available for acceleration and hill climbing at all speeds below 80 m. p. h.

Reduced air-resistance of the tear-drop car can be taken advantage of by installing a smaller engine. Especially at our present stage of highway and tire development, it might be agreed that 80 m. p. h. is high enough for maximum speed. Then, with the reduced air-resistance of the tear-drop car, it would be possible to use a much smaller and lower speed engine, maintain the same maximum speed, and improve fuel economy in miles per gallon of fuel considerably more than is shown in Fig. 3.

An automatic transmission, such as that discussed by Walter C. Keys in his paper on "Automatic Transmissions," whereby shift would automatically be made to a gear ratio suitable for efficient open-throttle engine operation, would additionally improve fuel economy in tear-drop cars, giving a combined

(Continued on Page 14)

CHICAGO SHOW EVENTS

WEDNESDAY, FEBRUARY 1
AVIATION DAY

All day session—National Automobile Dealers Association Convention—Medinah Athletic Club.

THURSDAY, FEBRUARY 2
WOMEN'S DAY

All day session—Genreal Motors Truck Corporation meeting—Hotel Stevens.

FRIDAY, FEBRUARY 3
SPORTS DAY

All day session—General Motors Truck Corporation meeting—Hotel Stevens.

Ten Passenger Car Sales Leaders, December, 1932

REPORTS PUBLISHED AS THEY COME IN

Returns for today: Colorado, Texas, Wyoming

In this table, 45 states and the District of Columbia **Comparative figures for November, 1932, will be found on Page 13**

States	Sales Dec., 1932	First		Second		Third		Fourth		Fifth		Sixth		Seventh		Eighth		Ninth		Tenth	
Alabama	408	Chev	167	Ford	123	Ply	58	Buick	11	Austin	8	D-WO	6	DS-E	4	H-O-Po	3	A-Re-R	2	*	1
Arkansas	52	Ford	32	Chev	14	Ply	3	B-C-Au	1												
Arizona	164	Ford	71	Chev	25	Ply	19	Dodge	12	Buick	8	F-S	6	Nash	4	Pont	3	DS-Pa	2	*	1
Cal	3535	Ford	1129	Ply	842	Chev	239	Dodge	176	Essex	129	Stude	115	Buick	109	Rockne	104	De Soto	69	Nash	66
Colorado	340	Chev	94	Ford	61	Ply	57	Buick	22	Essex	20	Pont	18	Dodge	10	Ch-S	8	R-WO	7	Olds	6
Conn.	690	Ply	166	Ford	142	Chev	118	Buick	52	Dodge	32	Pontiac	28	Hupp	20	Chrsyler	19	Essex	13	N-Pa	12
Delaware	142	Chev	36	Ford	35	Ply	21	Buick	18	Pontiac	5	$	3	C-E	2	*	1				
Florida	1185	Ford	396	Chev	210	Ply	209	Austin	154	B-E-Po	31	D-G	16	Ch-N-O	11	DS-R	7	Pa-Re	6	C-M-S-Wo	5
Georgia	427	Ford	124	Chev	121	Ply	57	Rockne	23	Austin	20	Pontiac	15	Buick	14	D-H-Pa	7	De Soto	5	N-O	4
Idaho	41	Chev	15	Ford	14	Plym	5	Buick	2	*	1										
Illinois	1432	Ply	372	Ford	296	Chev	200	Dodge	73	Buick	51	Po-E	45	Chrysler	37	Packard	36	DS-WO	29	Nash	28
Indiana	739	Ford	221	Chev	165	Ply	128	Dodge	32	Essex	27	Buick	21	Stude	18	Pontiac	17	De Soto	16	Olds	14
Kansas	341	Ford	146	Chev	92	Ply	25	Pontiac	15	Essex	12	D-O	7	B-R	6	L-WO	4	Nash	3	X	2
Kentucky	857	Ford	258	Chev	203	Ply	196	Dodge	48	Essex	23	B-Au	19	WO	14	Pontiac	12	Rockne	10	A-Pa	8
Louisiana	472	Ford	259	Chev	66	Ply	43	Dodge	22	Austin	14	Pontiac	9	B-N	8	R-S	6	DS-E	5	O-WO	3
Maine	97	Ford	32	C-P	18	Olds	5	E-R	4	D-Po	3	B-F-G-S	2	DS-Pa	1						
Maryland	916	Chev	220	Plym	191	Ford	182	WO	51	Essex	44	Dodge	42	Po-S	27	Buick	25	Rockne	22	Chry	19
Mass.	1365	Ford	314	Ply	280	Chev	188	Buick	93	Essex	68	Pontiac	59	Dodge	53	Rockne	37	Nash	36	Hupp	35
Mich.	2983	Ford	786	Chev	671	Ply	660	Dodge	224	Buick	141	Essex	77	Rockne	67	Pontiac	52	De Soto	33	Olds	31
Minn.	732	Ply	206	Ford	165	Chev	138	Hupp	37	D-O-Po	22	WO	20	E-R	15	Chrysler	14	Buick	11	Stude	9
Miss'ri	1344	Ford	417	Chev	294	Ply	283	Dodge	62	Pontiac	33	De Soto	31	Buick	28	Essex	27	WO	22	Hupp	21
Montana	40	Ford	19	Pontiac	6	Chev	5	Ply	4	Dodge	2	*	1								
Nebraska	228	Ford	79	Chev	66	Ply	29	WO	8	D-O	7	Pontiac	5	B-H-R	4	G-S	3	A-E	2	*	1
Nevada	17	Chev	4	B-G	3	F-P	2	D-O-Po	1												
N. Hamp.	69	Ford	22	Ply	12	Chev	10	Pontiac	6	B-E	4	Dodge	3	CH-R-S	2	G-N	1				
N Jersey	2293	Ply	604	Chev	427	Ford	390	Dodge	137	Buick	130	Pontiac	100	Essex	71	S-WO	43	N-O	37	Rockne	35
N Mexico	186	Ford	70	Chev	54	Ply	33	Dodge	9	Buick	5	Pontiac	3	O-S	2	*	1				
N. Y.	2507	Ply	648	Ford	570	Chev	326	Buick	116	Dodge	102	Pont	98	Stude	70	Essex	62	WO	59	Nash	55
N. Car.	1164	Ford	405	Chev	306	Ply	215	Dodge	46	Essex	42	Austin	31	Buick	25	Pontiac	24	Chrysler	15	Rockne	8
N. Dakota	22	Ford	12	Chev	6	P-R	2														
Ohio	4664	Ply	1170	Ford	1092	Chev	1029	Dodge	228	Pontiac	148	Essex	136	Buick	123	De Soto	110	WO	105	Rockne	82
Okla	641	Ford	183	Ply	139	Chev	137	Dodge	61	Buick	30	Pontiac	19	De Soto	9	Essex	8	S-WO	7	Rockne	6
Oregon	303	Ford	113	Chev	69	Ply	48	Buick	15	Nash	10	Stude	6	CH-G	5	D-O-R	4	DS-DV-R	3	E-H-L	2
Penn.	5925	Ply	1606	Ford	1249	Chev	957	Dodge	282	Buick	277	Pontiac	211	Essex	181	WO	130	CH-DS	121	Olds	96
R. Island	296	Ply	97	Ford	63	Chev	25	Buick	23	Dodge	13	Essex	11	De Soto	8	CH-H-Po	6	F-R	5	G-N-R-S	4
S. Car.	414	Ford	168	Chev	95	Ply	60	Austin	36	B-E	8	Rockne	7	Pontiac	6	Dodge	5	Chry	4	Hup	3
S. Dakota	94	Ford	44	Chev	26	Ply	9	Pontiac	5	D-O	2	*	1								
Texas	2451	Ford	951	Chev	599	Ply	438	Buick	89	Dodge	84	Pont	46	Rockne	45	Essex	32	Stude	30	Chry	20
Vermont	89	Ford	30	Ply	17	Chev	13	Essex	8	Chrysler	4	D-Po	3	Hu-WO	2	*	1				
Virginia	881	Ford	334	Ply	160	Chev	155	Pontiac	38	Essex	28	Dodge	26	Buick	23	WO	19	Nash	12	H-R	11
Wash.	815	Ford	198	Ply	191	Chev	141	Dodge	49	Pont	27	DS-E	25	Stude	24	B-R	23	Nash	16	Chry	15
W. Va.	584	Ply	201	Ford	161	Chev	78	Dodge	35	Pont	22	Essex	20	Buick	11	Olds	8	‡‡	6	A-Pa	3
Wis.	822	Ford	215	Ply	200	Chev	140	Dodge	45	B-Po	28	Essex	25	Nash	22	WO	20	Rockne	15	De Soto	12
Utah	30	Ford	13	Chev	5	Ply	4	*	1												
Wyoming	117	Chev	32	Ford	27	Ply	20	Buick	13	Essex	5	Dodge	3	††	2	*	1				
D. of Col.	565	Ford	106	Chev	92	P-WO	83	Pont	36	Dodge	29	Buick	25	Essex	15	Stude	13	Rockne	11	H-N	10

RAILROAD PUSHES ANTI-TRUCK BILLS IN NUTMEG STATE

Hartford, Conn., Jan. 31.—The New York, New Haven & Hartford Railroad carried its fight against truck competition into the General Assembly last week when eight bills were introduced providing for the restriction of automotive freight carriers and placing them under control of the Public Utilities Commission.

The commission would be empowered by the new legislation to prescribe uniform freight rates and set up general regulations to govern the operation of the highway freight carriers. Existing statutes governing the maximum size and weight of trucks are amended and the size and weight reduced. Truck registration fees would be increased, use of trailers prohibited and the working hours of truck drivers controlled in other bills embodied in the program.

The commission would be authorized to hold hearings and issue licenses both to common carriers and contract carriers. One bill defines the distinction between the two classes of carriers, a common carrier being a motor vehicle line carrying property for hire and a contract carrier as any other transportation line carrying other than its own products.

Certificates of convenience and necessity would be required for common carriers and the contract operators would have to prove that they would not interfere with existing lines. Interstate operators would be required to secure Connecticut permits. Gross weight of trucks, including load, for six-wheel trucks, would be 20 tons until January 1, 1934, after which trucks carrying more than 15 tons would have to have special permits and in 1935 the limit would again be reduced, this time to 10 tons.

Motor vehicles carrying freight would be limited to 11½ feet in height and the schedule of registration fees would be materially increased. A truck driver could work but twelve hours unless he had eight hours' rest, but he could not work more than sixteen hours in twenty-four. Operators of trucks carrying explosives would be required to stop before proceeding over any railroad grade crossing.

A number of other bills affecting the motor truck industry, several of them covering the same ground as the railroad-sponsored group, will be considered by the Legislature. One is a drastic measure, which would prohibit trucks carrying loads of more than five tons.

The Motor Truck Association of Connecticut will hold a meeting January 7, at the Hotel Bond here, to discuss the legislative situation. Representatives of a number of other Connecticut organizations will attend, including the State Grange, Connecticut Highway Taxpayers' Association, Connecticut Petroleum Committee, Independent Oil Men's Association of Connecticut, tire and truck dealers and dairymen.

Myles W. Illingworth, executive secretary of the truck group, is leading the fight against the railroad-sponsored bills. Two years ago the association was successful in fending off several measures which threatened the welfare of the trucking industry.

TIRE PRICE CUTTING STOPPED BY FACTORY ORDE

Cleveland, Jan. 31.—An orgy of price-cutting during which tires were marked down 56 per cent. in a single sweep was at an end today, halted by a command from factory headquarters in Akron, O.

While the twelve-hour price battle lasted, automobile owners enjoyed a shoppers' holiday and dealers forgot business hours. Truck and fleet owners bought tires enough to last for months and private motorists equipped their machines with full sets of first-grade tires. Before it ended, some dealers bought from competitors at prices they said were less than wholesale.

N. H. SHOW IS PLANNED

Concord, N. H., Jan. 31.—The annual New Hampshire automobile show will be held early in March at the Ritz here, it has been announced. The exact date of opening has not been made known, but it is reported that a number of dealers have already reserved space. Interest is said to be running higher than ever before, particularly in view of the extraordinary success achieved by this year's Hartford, Conn., show, which closed Saturday with a record-breaking sales total.

KELSEY LEAVES RUSSELL

Middletown, Conn., Jan. 31.—Harry H. Kelsey has resigned as purchasing agent of the Russell Manufacturing Company, manufacturers of brake lining and other automotive materials, after thirty years' association with the concern. He is succeeded by G. Tryon Palmer, who has been in the general sales department for a number of years.

Need Standards for Diesel Fuels

(Continued from Page 6)

cal properties. The principal physical properties are discussed in the following paragraphs with regard to their practical importance to the user.

Specific gravity is perhaps the most commonly specified physical property. In the absence of a better one, it has become the engine buyer's most relied-on guide as to the suitability of a certain engine fuel. There exists a fair degree of correlation between the specific gravity, the flash point, the spontaneous ignition temperature and the carbon-hydrogen ratio of a fuel, but any one experienced with the selection of oil engine fuels knows that by relying on this property alone he will be often misguided. The important fact for the engine designer and operator to recognize is that no true relation can be established between specific gravity and delay period.

Flash Point—The lowest temperature at which a fuel ignites when a flame is passed over it. It is an indication of the fire hazard involved with the storage of fuels, but it has no meaning in regard to engine performance.

Viscosity is very important for the correct judgment of a fuel's suitability for an injection engine. With a given injection pressure and nozzle design, the drop size of the fuel spray increases with the fuel's viscosity, thus resulting in a slower rate of burning. At the same time, an increase of drop size makes the fuel spray penetrate further into the combustion chamber. As combustion chambers are small in automotive designs, high viscosity may cause the fuel spray to hit cool combustion chamber walls and thus cause incomplete combustion and smoky exhaust. The size of the fuel lines, as well as the type of injection pump and injection valve, also impose limitations on the fuel viscosity. The high limit is set by the increasing resistance of the fuel to flow in sufficient volume at winter temperatures through fuel lines of small diameter. A low, useful limit on viscosity will be found in the fact that the fuel's lubrication value usually decreases with decreasing viscosity. Fuels with a viscosity lower than 40 seconds U. S. Saybolt at 70 degrees Fahrenheit not only cause an excessive increase of the leak past pump plungers and injector needles, thus disturbing the injection characteristics, but also accelerate wear. In extreme cases, a very low fuel viscosity may result in sticking and galling of plungers and spray needles. In spite of its importance for the reasons given above, viscosity has not influence on the delay period of any fuel.

Spontaneous Ignition Temperature—Although the procedure to determine the spontaneous or self-ignition temperature for fuels has not been standardized as yet, it has been referred to often as the best indicator of a fuel's behavior in an engine. It designates the lowest temperature at which a fuel drop wil self-ignite in a stream of oxygen at atmospheric pressure. It is admitted that of all physical properties, the S. I. T. comes closest to predicting the delay period a fuel will have in an engine, it is far from being an accurate indicator. The S. I. T. of oil engine fuels usually decreases with the increase of pressure, so that in an engine this figure is actually quite different from the one established in the testing apparatus.

Volatility—Oil vapor and gas formation in an engine before ignition is negligible, and does not measurably influence the delay period. In contrast to the S. I. T. which drops with an increase of pressure, the boiling point of all liquids increases with the pressure. For this reason, a fuel's volatility alone does not permit of drawing any conclusions as to its behavior during the ignition and the combustion processes.

None of the principal physical properties of oil engine fuel, alone or combined, offer possibilities of becoming an accurate measure of a fuel's delay period in high speed oil engines. The knowledge of the various physical properties is necessary to make a proper selection, but they do not conclusively answer the most important question: Will the fuel give smooth engine performance?

Physical properties so far have served as a guide in this respect only because no better guide was known. With the coming of the automotive Diesel engine and its higher sensitiveness to the delay periods of fuels, this method of estimating its suitability has become altogether unsatisfactory for the selection and specification of proper fuels.

It is suggested that once a method for standard Diesel fuel knock rating has been established that a standard for Diesel fuel specifications be set also, covering the following properties:

1. Standard knock rating—being an indicator for the delay period and combustion smoothness to be expected.
2. Gravity—preferably expressed as specific gravity, instead of the present expression in degrees Baume or A. P. I. This would simplify conversion calculations from weight to volume.
3. Viscosity in degrees Saybolt Universal at 70 degrees F.
4. Power point in defrees F. This physical property w/ l be assential for automotive Diesel installations operating at low surrounding temperatures.
5. Conradson carbon.
6. Water and sediment.
7. Sulphur content.

The last three items have an important influence on the wear and depreciation of the engine as well as the carbon formation in the combustion chamber.

Ten Passenger Car Sales Leaders, November, 1932

Comparative figures for December, 1932, will be found on Page 12

States	Sales Nov., 1932	First		Second		Third		Fourth		Fifth		Sixth		Seventh		Eighth		Ninth		Tenth	
Alabama	676	Chev	233	Ford	206	Ply	83	Austin	39	Dodge	17	Po-WO	12	Buick	11	CH-E	10	Rockne	8	DS-O	7
Arkansas	293	Ford	137	Chev	108	Ply	18	Dodge	6	E-O	3	‡	2	*	1						
Arizona	164	Ford	73	Chev	34	Ply	14	B-E	6	O-R-S	5	D-Po	4	De Vaux	2	*	1				
Cal	4028	Ford	1426	Ply	596	Chev	470	Buick	178	Rockne	151	Dodge	145	Stude	144	Essex	137	De Soto	106	Pontiac	105
Colorado	330	Chev	94	Ford	88	Ply	52	Dodge	20	E-Po	10	WO	9	Rockne	8	B-N	6	DS-G-HU-H	3	A-Ch-L-O-S	2
Conn.	837	Ford	166	Ply	157	Chev	154	Pontiac	52	Buick	48	Essex	32	De Soto	28	Dodge	26	Nash	17	O-Po	16
Delaware	118	Ford	46	Chev	26	Ply	18	Chrysler	5	B-Po	4	Packard	3	O-S	2	*	1				
Florida	755	Ford	273	Chev	160	Austin	109	Ply	58	Pontiac	29	B-D-E	18	Olds	12	Graham	9	Packard	8	Ch-DS	7
Georgia	685	Ford	266	Chev	158	Ply	87	Austin	30	Buick	18	Rockne	16	E-Po	15	Dodge	13	Chrysler	9	Pa-S	8
Idaho	110	Chev	36	Ford	35	Plym	16	Pont	7	Buick	3	DS-N-O	2	*	1						
Illinois	1804	Ford	540	Chev	330	Ply	231	Pont	90	Essex	56	Buick	51	Stude	48	DS-N	43	D-PA	41	Rockne	37
Indiana	854	Ford	285	Chev	177	Ply	73	Pontiac	43	Essex	36	WO	32	Buick	26	Rockne	25	Olds	24	Dodge	21
Kansas	779	Ford	278	Chev	214	Ply	53	Essex	45	Pontiac	40	WO	24	Rockne	23	Buick	16	Stude	13	Olds	12
Kentucky	606	Ford	212	Chev	124	Ply	104	Essex	20	Rockne	19	Pontiac	16	Austin	15	Chrysler	14	B-D	12	DS-WO	11
Louisiana	609	Ford	307	Chev	130	Ply	42	Austin	20	Dodge	18	Pontiac	12	O-R	11	Nash	9	Stude	8	Buick	7
Maine	224	Ford	66	Chev	58	Ply	24	E-Po	13	Buick	9	Rockne	7	Nash	5	C-G-S	4	†††	2	*	1
Maryland	636	Ford	211	Chev	114	Plym	91	Pont	26	Essex	25	Buick	24	Rockne	20	DS-D	14	Chry	13	Stude	12
Mass.	2160	Ford	595	Ply	340	Chev	311	Pontiac	109	Essex	107	Buick	86	Nash	72	Dodge	70	Rockne	58	Chrysler	55
Mich.	1560	Ford	562	Ply	295	Chev	238	Pontiac	63	Essex	54	Dodge	37	Olds	35	B-R	34	Chrysler	28	DS-G	2
Minn.	687	Ford	217	Chev	168	Ply	54	Pontiac	43	Buick	26	Olds	24	Hupp	23	DS-Pa	15	Rockne	14	Stude	13
Miss'ri	1403	Ford	442	Chev	344	Ply	209	Pontiac	71	Buick	44	D-O	28	CH-DS	27	Essex	22	R-S	21	Hupp	18
Montana	84	Ford	26	Chev	23	Pontiac	10	Ply	6	Buick	4	O-WO	3	CH-DS	2	*	1				
Nebraska	380	Ford	142	Chev	116	Ply	41	Pontiac	13	Olds	11	Buick	9	WO	3	Rockne	6	Graham	5	CH-D-E-S	4
Nevada	36	Chev	12	Ford	9	B-O-S	3	*	1												
N. Hamp.	201	Ford	67	Chev	44	Ply	27	Pontiac	9	Essex	8	B-R-S	6	†	4	Dodge	3	*	1		
N Jersey	1673	Ford	415	Ply	319	Chev	192	Buick	95	Pontiac	93	Essex	55	Stude	51	CH-DS-WO	42	Rockne	41	D-O	37
N Mexico	159	Ford	74	Chev	42	Ply	10	Buick	9	Pontiac	7	Dodge	4	Olds	3	E-S	2	*	1		
N. Y.	5439	Ford	1306	Ply	840	Chev	651	Stude	302	Buick	287	Pont	243	Essex	179	Olds	173	Dodge	170	WO	129
N. Car.	912	Ford	446	Chev	184	Ply	85	Austin	37	Pontiac	29	Essex	26	Dodge	22	Buick	20	CH-R	11	Olds	7
N. Dak.,	114	Ford	52	Chev	33	Ply	7	Pont	6	WO	5	Graham	4	Olds	2	*	1				
Ohio	2276	Ford	710	Ply	405	Chev	362	Pontiac	119	Essex	73	WO	61	De Soto	59	Dodge	55	Buick	49	Rockne	47
Okla	1014	Ford	383	Chev	266	Ply	132	Pontiac	61	Dodge	36	Buick	22	O-R	16	Stude	15	Ch-DS	11	WO	10
Oregon	331	Ford	121	Chev	75	Ply	58	Buick	14	Pontiac	13	De Soto	8	Olds	7	Dodge	5	CH-E-N	4	A-S	3
Penn.	3724	Ford	991	Chev	623	Ply	523	Pontiac	194	Buick	173	Essex	149	WO	126	Chrysler	118	Olds	113	Dodge	108
R. Island	368	Ford	84	Ply	82	Chev	57	Pontiac	21	Essex	20	Buick	15	De Soto	12	Chrysler	11	Dodge	9	Olds	7
S Car	386	Ford	168	Chev	89	Austin	41	Ply	25	Essex	11	Pontiac	9	Dodge	8	Buick	7	De Soto	6	Olds	5
S. Dak.	145	Ford	54	Chev	42	Ply	13	Dodge	7	Pontiac	6	O-R	5	Chrysler	4	B-DS	3	Au-E-S	1		
Texas	2666	Ford	1110	Chev	680	Ply	309	Pont	104	Rockne	70	Buick	59	Dodge	56	Essex	44	WO	30	Stude	28
Wash.	415	Ford	107	Ply	89	Chev	69	Buick	19	Stude	14	Pont	13	Olds	12	Ch-E	11	N-R	9	DS-D-Pa	7
Vermont	155	Ford	54	Chev	29	Ply	19	O-Po	9	Essex	8	Buick	6	Dodge	4	Ch-S	3	N-R	2	*	1
Virginia	1096	Ford	514	Chev	268	Ply	91	Pontiac	48	Essex	36	Buick	19	De Soto	17	WO	16	Dodge	15	CH-H	10
W. Va.	367	Ford	154	Chev	59	Ply	33	Pont	21	Chrysler	13	Essex	12	Dodge	10	R-Wo	9	Olds	8	De Soto	7
Wis.	989	Ford	287	Chev	195	Ply	118	Pont	83	Olds	33	Essex	32	WO	27	Buick	26	D-N	24	Stude	23
Utah	120	Chev	31	Ford	29	Ply	12	B-Po	9	Essex	8	DS-D	4	Hu-N	3	G-Pa	2	L-R-S-WO	1		
Wyoming	71	Ford	22	Chev	19	Ply	13	B-D	5	DS-E	2	Ch-Pa-Po	1								
D. of Col.	534	Ford	198	Chev	62	Pontiac	50	Plym	47	Essex	21	B-H	18	Olds	13	Packard	12	DS-D	11	Rockne	9

KEY TO ABBREVIATIONS AND SYMBOLS

A—Auburn, Au—Austin, B—Buick, C—Cadillac, Ch—Chrysler, DV—De Vaux, DS—De Soto, D—Dodge, E—Essex, F—Franklin, G—Graham, H—Hupmobile, Hu—Hudson, LS—La Salle, L—Lincoln, N—Nash, O—Oldsmobile, Pa—Packard, P—Plymouth, Po—Pontiac, Re—Reo, R—Rockne, S—Studebaker, WK—Willys-Knight, WO—Willys-Overland. *All cars in this position registered only one. **Buick, Dodge, Hudson, Studebaker and Willys-Overland. *—Buick, Cadillac, De Soto, Dodge, Graham and Pontiac. ***Buick, Dodge, Hudson, Nash, Studebaker and Willys-Overland. †—Chrysler, De Soto, Graham, Nash and Willys-Overland. ‡Buick, De Soto, Nash, Pontiac, Reo, Rockne and Austin. §De Soto, Dodge, Franklin, Hudson, Oldsmobile and Willys-Overland. ‡‡Chrysler, De Soto, Graham, Nash, Rockne, Willys-Overland. $Chrysler, Hupmobile, Nash, Oldsmobile and Packard. X-All cars in this position registered two. ††Nash, Oldsmobile, Packard, Pontiac, Willy s-Overland.

MAJOR SPECIFICATIONS AND MECHANICAL DETAILS

CORRECTED THE DAY SPECIFI CATION CHANGES ARE MADE

MAKE AND MODEL	Weight—5-P. Sedan	Wheel Base	Engine Make	Cooling System Thermostat	Valve Arrangement	Cylinders	Bore and Stroke	Piston Disp.	Compression Ratio	Tax H. P.	Brake H. P. and Peak R. P. M.	Piston Make or Material	No. Main Br'gs	Oil Purifier	Fuel Cleaner	Air Cleaner	Carburetor	Carburetor Heat Control	Front End Drive	Ignition System
Auburn 8-101	3678	127	Lyc	Dole	L	8	3 x4¾	268.6	5.26	28.8	100@3400	*Alum	5	Pur-F	No	AC	Str	Man	Chain	Del-R
Auburn 8-105	——	127	Lyc	Dole	L	8	3 x4¾	268.6	5.26	28.8	100@3400	*Alum	5	Pur	No	AC	Str	Auto	Chain	Del-R
Auburn 12-161	4465	133	Lyc	Dole	H	12	3⅛x4¼	391.1	5.50	46.8	160@3400	*Alum	4	Lyc	Ste	AC	Str	——	Link	Del-R
Auburn 12-165	——	133	Lyc	Dole	H	12	3⅛x4¼	391.1	5.50	46.8	160@3400	*Alum	4	Lyc	Ste	AC	Str	Man	Link	Del-R
Austin	§1120	75	Own	No	L	4	2.2x3	45.6	5.10	7.80	13@3400	Alum	2	No	No	No	Til	——	Gear	Aut-L
Buick 33-50	3863	119	Own	Har	O	8	2⅞x4¼	230.4	5.25	27.6	86@3200	†CI	5	AC	AC	AC	Mar	Auto	Tex	Del-R
Buick 33-60	4401	127	Own	Har	O	8	3⅛x4⅝	272.6	5.25	30.0	97@3200	†CI	5	AC	AC	AC	Mar	Auto	Tex	Del-R
Buick 33-80	4617	130	Own	Har	O	8	3⅝x5	344.8	4.80	35.1	113@3200	†CI	5	AC	AC	AC	Mar	Auto	Tex	Del-R
Buick 33-90	4901	138	Own	Har	O	8	3⅝x5	344.8	4.80	35.1	113@3200	†CI	5	AC	AC	AC	Mar	Auto	Tex	Del-R
Cadillac V-8	5015	134-140	Own	No	L	8	3⅜x4⅛	353.0	5.40	36.4	115@3000	†CI	3	AC	AC	AC	Own	No	Morse	Del-R
Cadillac V-12	5395	134-149	Own	No	O	12	3½x4	368.0	5.60	46.9	135@3400	†CI	4	Cuno	AC	AC	DL	No	Morse	Del-R
Cadillac V-16	5785	143-149	Own	No	O	16	3 x4	452.0	5.70	57.5	165@3400	CI	5	Cuno	AC	AC	DL	No	Morse	Del-R
Chevrolet Eagle	2895	110	Own	No	L	6	3⅜x4	206.8	5.20	26.3	65@2800	CI	3	No	AC	AC	Car	Auto	Gear	Del-R
Chrysler Six	3143	117	§Own	B&B	L	6	3¼x4½	224.0	5.35	25.3	83@3400	Alum	4	Pur	AC	AC	*Str	Auto	Morse	Del-R
Chrysler Royal 8	†3482	120	§Own	B&B	L	8	3¼x4⅛	273.8	5.20	33.8	90@3400	Alum	5	Pur	AC	AC	*Str	Auto	Morse	Del-R
Chrysler Imperial 8	†3864	123	§Own	Pines	L	8	3¼x4½	298.6	6.20	33.8	108@3400	Alum	5	Pur	AC	AC	*Str	Auto	Morse	Del-R
Chrysler Imp. Cust. Eight	2895	146	Own	Pines	L	8	3½x5	384.8	5.80	39.2	135@3200	*Alum	—	Pur	AC	AC	*Str	Auto	Morse	Del-R
Continental Beacon	2160	101½	Own	Dole	L	4	3⅜x4	143.1	5.05	18.2	40@2700	CI	3	No	AC	Hol	Mar	No	Link	Aut-L
Continental Flyer	——	107	Own	Dole	L	6	3 x4	169.6	5.21	21.6	65@3500	CI	4	No	AC	Hol	Mar	No	Link	Aut-L
Continental Ace	——	114	Own	Dole	L	6	3⅜x4	214.7	5.23	27.3	85@3600	Alum	4	AC-F	AC	AC	Til	——	Morse	Aut-L
Cord (Fr. Wh. D.)	4620	137½	Lyc	Ful	L	8	3¼x4½	298.6	5.25	33.8	115@3300	*Alum	5	Pur	AC	No	Sch	Man	Link	Del-R
De Soto Six	——	114⅜	§Own	B&B	L	6	3¼x4⅜	217.8	5.35	25.3	79@3400	Alum	4	Pur	AC	AC	**B&B	Auto	Morse	Del-R
Dodge Six	2620	111¼	§Own	B&B	L	6	3⅛x4⅜	201.3	5.50	23.4	75@3600	*Alum	4	Pur	AC	AC	Str	Auto	Morse	Del-R
Dodge Eight	——	122	§Own	B&B	L	8	3¼x4¼	282.1	6.20	33.8	100@3400	Alum	5	Pur	AC	AC	*Str	Auto	Morse	Del-R
Essex Terraplane 6	2250	105	Own	Th-Sy	L	6	2⅞x4¾	193.0	5.80	20.7	70@3200	Alum	3	No	AC	Bur	Car	Man	Tex	Aut-L
Essex Terraplane 8	——	113	Own	Th-Sy	L	8	2⅞x4½	243.9	5.80	27.6	94@3200	Alum	5	No	AC	Mon	*Car	Man	Tex	Aut-L
Ford A	2398	106	Own	No	L	4	3⅞x4¼	200.5	4.60	24.0	50@2600	Alum	3	No	Own	No	Zen	No	VAR-G	Aut-L
Ford V-8	2425	106	Own	No	L	8	3⅛x3¾	220.0	5.50	30.0	65@3400	Alum	3	No	Own	No	DL	No	VAR-G	Mal
Franklin Series 16	4403	132	Own	O-S	O	6	3½x4⅜	274.0	5.12	29.4	100@3100	*Alum	7	Pur	AC	AC	Str	No	Chain	Del-R
Franklin Series 17	5640	144	Own	O-S	O	12	3¼x4	398.0	5.12	50.7	150@3100	*Alum	7	Pur	AC	AC	Str	No	Link	Del-R
Franklin Olympic Series 18	3625	118	Own	O-S	O	6	3½x4¾	274.0	5.12	29.4	100@3100	*Alum	7	Pur	AC	AC	Str	No	Chain	Del-R
Graham Standard Six	——	185-OA	Own	B&B	L	6	3¼x4½	224.0	6.50	25.3	85@3400	*Alum	7	—	AC	AC	DL	Man	Link	Del-R
Graham Stand.-Cust. Eight	——	191-5OA	Own	None	L	8	3¼x4	245.4	6.50	31.2	95@3400	*Alum	5	AC	AC	AC	DL	Man	Link	Del-R
Hudson Super Six	——	113	Own	Th-Sy	L	6	2⅞x4¾	193.0	6.20	20.7	73@3200	Alum	3	No	AC	AC	Mar	Man	Tex	Aut-L
Hudson Eight	——	119-132	Own	Th-Sy	L	8	3 x4½	254.1	5.80	28.8	101@3600	Alum	5	No	Ste	AC	Mar	Auto	Morse	Aut-L
Hupmobile 321	——	121	Own	B&B	L	6	3⅜x4¼	228.1	5.75	27.3	90@3800	*Alum	4	Han	Ste	AC	Car	Man	Chain	Aut-L
Hupmobile 322	——	122	Own	B&B	L	8	3 x4⅝	261.5	5.47	28.8	93@3600	Alum	5	Pur	Ste	AC	Str	Man	Morse	Aut-L
Hupmobile 326	——	126	Own	B&B	L	8	3⅛x4¾	303.2	5.34	32.5	109@3500	Alum	5	Pur	Ste	AC	Str	Man	Morse	Aut-L
La Salle V-8	4860	130-136	Own	None	L	8	3⅜x4⅛	353.0	5.40	36.4	115@3000	†CI	3	AC	AC	AC	Own	No	Morse	Del-R
Lincoln V-12	——	136	Own	—	L	12	3 x4½	381.7	5.50	43.2	125@3400	Alum	4	No	AC	AC	Str-2	No	Chain	Aut-L
Lincoln V-12	——	145	Own	—	L	12	3¼x4½	448.0	5.25	50.7	150@3400	Alum	7	No	AC	AC	Str-2	No	Chain	Aut-L
Marmon Sixteen	5360	145	Own	Pines	O	16	3⅛x4	490.8	5.75	62.5	200@3400	Alum	5	AC-F	AC	AC	Str	Man	Diam	Del-R
Nash Big Six	——	116	Own	B&B	L	6	3¼x4⅜	217.7	5.30	25.3	75@3200	Alum	7	Yes	Yes	Yes	Str	Auto	Chain	Aut-L
Nash Standard Eight	3200	116	Own	B&B	L	8	3 x4⅜	247.4	5.10	28.8	80@3200	Alum	9	Yes	Yes	Yes	Str	Auto	Chain	Aut-L
Nash Special Eight	3400	121	Own	B&B	L	8	3 x4⅜	247.4	5.10	28.8	85@3200	Alum	9	Yes	Yes	Yes	Str	Man	Chain	Aut-L
Nash Adv. Twin Ignition 8	3870	128	Own	B&B	O	8	3⅛x4¼	260.8	5.25	31.2	100@3400	Alum	9	Yes	Yes	Yes	Str	Man	Chain	*Aut-L
Nash Am. Twin Ignition 8	*	133-142	Own	B&B	O	8	3⅜x4½	322.0	5.25	36.4	125@3600	Alum	9	Yes	Yes	Yes	Str	Man	Chain	*Aut-L
Oldsmobile Six	3110	115	Own	Har	L	6	3⅜x4⅛	221.4	5.30	27.3	80@3200	†CI	4	AC	AC	AC	*Str	Auto	Chain	Del-R
Oldsmobile Eight	——	119	Own	Har	L	8	3 x4¼	240.3	5.50	28.8	90@3350	†CI	5	AC	AC	AC	*Str	Auto	Chain	Del-R
Packard Eight	***	127½-136	Own	Pines	L	8	3⅛x5	320.0	6.00	32.5	120@3200	*Alum	9	Yes	Yes	AC	*Str-2	Auto	Morse	NE
Packard Super Eight	***	135-142	Own	Pines	L	8	3½x5	384.8	6.00	39.2	145@3200	*Alum	9	Yes	Yes	AC	*Str-2	Auto	Morse	NE
Packard Twelve	***	142-147	Own	Pines	L	12	3⅞x4	445.5	6.00	56.7	160@3200	*Alum	4	Yes	Yes	AC	*Str-2	No	Chain	NE
Pierce-Arrow 836	——	136-139	Own	Pines	L	8	3½x4¾	366.0	5.50	39.2	135@3400	*Alum	9	Pur-F	Ste	AC	Str	Auto	Chain	Del-R
Pierce-Arrow 1236	——	136-139	Own	Pines	L	12	3¾x4	429.0	6.10	54.6	160@3400	*Alum	7	Pur-F	Ste	AC	Str	Auto	Chain	Del-R
Pierce-Arrow 1242-7	——	137-142-7	Own	Pines	L	12	3½x4	462.0	6.00	58.8	175@3400	*Alum	7	Pur-F	Ste	AC	Str	Auto	Chain	Del-R
Plymouth Six	2553	107	§Own	—	L	6	3⅛x4⅛	189.8	5.50	23.4	70@3600	Alum	4	Yes	Yes	Yes	*B&B	Auto	Morse	Del-R
Pontiac Straight Eight	3285	115	Own	Own	L	8	3⅛x3½	223.4	5.70	32.6	77@3600	†CI	5	AC	AC	AC	Car	Auto	Morse	Del-R
Reo Flying Cloud	——	117½	Own	Dole	L	6	3⅜x5	268.0	5.30	27.3	85@3200	Alum	7	Han	AC	—	*Str	Auto	Morse	Del-R
Reo Royale	——	131	Own	Dole	L	8	3⅜x5	358.0	5.30	36.4	125@3300	Alum	9	Han	AC	—	*Sch	Man	Morse	Del-R
Rockne Six	——	110	Own	Dole	L	6	3⅛x4⅛	189.8	5.50	23.4	70@3200	†CI	4	—F	AC	No	Str	Man	Morse	Aut-L
Studebaker Six	——	117	Own	B&B	L	6	3¼x4⅝	230.0	5.50	25.4	85@3200	†CI	4	—F	Ste	AC	*Str	Auto	Cel	Del-R
Studebaker Com. Eight	——	117	Own	B&B	L	8	3⅛x4	236.0	5.50	30.0	100@3800	†CI	9	Pur	Ste	UN	*Str	Auto	Cel	Del-R
Studebaker President Eight	——	125	Own	B&B	L	8	3⅛x4¼	250.0	5.50	30.0	110@3600	*Alum	9	Pur	AC	UN	*Str	Auto	Cel	Del-R
Studebaker President Eight	——	135	Own	B&B	L	8	3½x4⅜	337.0	5.50	39.2	132@3400	*Alum	9	Han	AC	UN	*Str	Auto	Cel	Del-R
Stutz LAA	4383	127½	Own	Pines	O	6	3⅜x4½	241.5	5.50	27.3	85@3150	*Alum	7	Pur	AC	Pur	Zen	Man	Link	Del-R
Stutz SV-16	4885	134½-145	Own	Pines	O	8	3⅜x4½	322.0	5.50	36.4	113@3300	*Alum	9	Pur	AC	Pur	Zen	Man	Link	Del-R
Stutz DV-32	*5281	134½-145	Own	Pines	O	8	3⅜x4½	322.0	5.00	36.4	156@3900	*Alum	9	Pur	Ste	Pur	Str	Auto	Link	Del-R
Willys 77	——	156OA	§Own	None	L	4	3⅛x4¾	134.2	5.13	15.6	48@3200	CI	3	—F	AC	AC	Til	Man	Gear	Aut-L
Willys 99	——	174OA	§Own	Var	L	6	3⅛x4¼	213.3	5.26	26.3	80@3400	CI	3	—F	AC	AC	Til	Man	Link	Aut-L

FISHLEIGH URGES REVISION IN CAR DESIGN

(Continued from Page 12)

improvement in miles per gallon over the present conventional sedan which would be surprising.

In conclusion, the composite operating advantages of the streamlined tear-drop car over those of a conventional sedan shows:

1. Total car resistance cut in half.

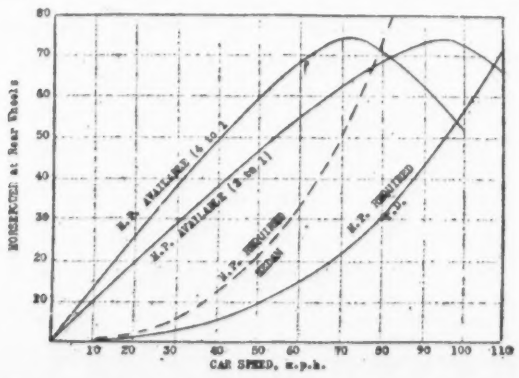


FIG. 8—Comparative horse power curves for conventional sedan and tear-drop car, using gear ratios of 4 to 1 and 3 to 1.

2. Miles per gallon of gasoline doubled.

3. Maximum speed, a 25 per cent. increase, from 79 to 98 miles per hour.

4. Accelerating increasing greater as speeds increase; 13 per cent. greater at 40 miles per hour, and 50 per cent. greater at sixty miles per hour.

5. Hill-climbing ability, increasingly greater as speeds increase; 13 per cent. greater at forty miles per hour and 50 per cent. greater at sixty miles per hour.

6. Center of gravity and over-all height, lowered.

7. Riding comfort, greatly improved, with all seats suspended between the axles.

8. Engine noise, heat and odors eliminated, owing to engine location at the rear.

9. Clear vision ahead, owing to removal of the engine to the rear.

10. Weight and cost, less than those of the conventional sedan.

11. Wheelbase and over-all car length, the same as those of the conventional middle-class sedan.

12. Beauty and grace, owing to flowing curves and graceful proportions, which are basic in streamlined forms.

What a picture! What a call for engineering conquest and progress!

FIG. 7—Curves showing grade-climbing ability for conventional sedan and tear-drop car at various speeds. (Same engine and 4 to 1 gear ratio)

Streamlining and engines at the rear and tear-drop cars are coming, not because of novelty or sensationalism, but because of sheer merit, mechanically, operatively and economically.

Looking at the problem from one angle, it suggests a little radicalism and a lot of work. From another angle it spells out the three words "inspiration," "engineering" and "opportunity." In a broad sense, it is the greatest call ever sent out by the automotive world for engineering courage and engineering leadership.

MONTGOMERY COUNTY SHOW

Fort Plain, N. Y., Jan. 31—The first western Montgomery county automobile show will be held in Moyer Hall, February 2, 3, and 4.

OF PRESENT AMERICAN PASSENGER CAR CHASSIS

CORRECTED THE DAY SPECIFICATION CHANGES ARE MADE

MAKE AND MODEL	Generator and Starter	Automatic Starter	Clutch	Automatic Clutch Control	*Transmission Make	Free Wheeling Make	Universals	Rear Axle	Ratio	Final Drive—Type	BRAKES Make	BRAKES Type	BRAKES Amplifier	Steering Gear Make	SPRINGS Rear Type	SPRINGS Rear Length	Rear Shackles	Chassis Lubrication	Tires
Auburn 8-101	*Del-R	—	Long	No	DG	LGS	U	Col ½	4.70	Sp	Mid	Mech	—	Ross	S	56¾	Own	Bijur	17x5.50
Auburn 8-105	*Del-R	B-S†	Long	No	DG	LGS	U	Col ½	3.40	Sp	Ben	Hyd	—	Ross	S	56¾	Own	Bijur	17x6.00
Auburn 12-161	*Del-R	—	Long	No	DG	LGS	M	Col ½	4.08	Sp	Ben	Hyd	—	Ross	S	56¾	Own	Bijur	17x6.00
Auburn 12-165	*Del-R	B-S†	Long	No	——	LGS	M	Col ½	3.04	Sp	Ben	Hyd	VB	Ross	S	56¾	Own	Bijur	17x6.50
Austin	*Aut-L	—	Own	No	Own	None	S	Sal ½	5.25	Sp	Own	Mech	—	Own	Cant	22⅞	——	Al-Z	18x3.75
Buick 33-50	Del-R	—	Own	Ben	Own	None	O	Own ½	4.70	Sp	Own	Mech	—	Sag	S	56	Own	Al-Z	17x6.00
Buick 33-60	Del-R	—	Own	Ben	Own	None	O	Own ¾	4.60	Sp	Own	Mech	—	Sag	S	55¾	Own	Al-Z	17x6.50
Buick 33-80	Del-R	—	Own	Ben	Own	None	O	Own ¾	4.27	Sp	Own	Mech	—	Sag	S	58⅞	Own	Al-Z	17x7.00
Buick 33-90	Del-R	—	Own	Ben	Own	None	O	Own ¾	4.36	Sp	Own	Mech	—	Sag	S	58⅞	Own	Al-Z	17x7.00
Cadillac V-8	Del-R	—	Own	†Ben	Own	None	S	Own ¾	4.60	Sp	Own	Mech	VB	Sag	S	58	Own	Alem	17x7.00
Cadillac V-12	Del-R	—	Own	†Ben	Own	None	S	Own ¾	4.80	Sp	Own	Mech	VB	Sag	S	58	Own	Alem	17x7.50
Cadillac V-16	Del-R	—	Own	†Ben	Own	None	S	Own ¾	4.64	Sp	Own	Mech	VB	Sag	S	60	Own	Alem	17x7.50
Chevrolet Eagle	Del-R	D-St	Own	No	Own	LGS	O	Own ½	4.11	Sp	Own	Mech	—	Sag	S	54	Tryon	Alem	18x5.25
Chrysler Six	Del-R	—	Borg	†Ben	Own	NP	U	Own ½	4.38	Sp	Lock	Hyd	—	——	S	53⅜	Sil-U	Al-Z	17x5.50
Chrysler Royal 8	Del-R	—	Borg	Ben	Own	NP	U	Own ½	4.30	Sp	Lock	Hyd	—	Gem	S	53⅜	Sil-U	Al-Z	17x6.00
Chrysler Imperial 8	Del-R	—	Borg	Ben	Own	NP	U	Own ½	4.30	Sp	Lock	Hyd	VB	Gem	S	54¾	——	Al-Z	17x6.50
Chrysler Imp. Cust. Eight	Del-R	—	Borg	Ben	Own	NP	U	Own ½	4.10	Sp	Lock	Hyd	VB	Gem	S	57½	——	Al-Z	17x7.50
Continental Beacon	Aut-L	—	Rock	No	WG	——	S	NP ½	4.33	Sp	Mid	Mech	—	Sag	Cant-2	27⅞	Sil-U	Al-Z	17x5.25
Continental Flyer	Aut-L	—	Rock	No	WG	——	S	NP ½	4.33	Sp	Mid	Mech	—	Sag	Cant-2	27⅞	Sil-U	Al-Z	17x5.25
Continental Ace	Aut-L	—	Borg	Yes	WG	WG	S	NP ½	4.30	Sp	Mid	Mech	—	Ross	S	55½	——	Al-Z	17x5.50
Cord (Fr. Wh. D.)	*Del-R	—	Long	No	DG	——	M	Col F	4.80	Hy	Lock	Hyd	—	Gem	S	62	Rub	Bijur	18x7.00
De Soto Six	Del-R	—	Borg	†Ben	Own	NP	U	Own ½	4.38	Sp	Lock	Hyd	—	——	S	53⅜	Sil-U	Al-Z	17x5.50
Dodge Six	Del-R	—	Borg	†Ben	Own	NP	S	Own ½	4.38	Sp	Lock	Hyd	—	——	S	53½	Sil-U	Al-Z	16x6.00
Dodge Eight	Del-R	—	Borg	Ben	Own	NP	S	Own ½	4.30	Sp	Lock	Hyd	—	Gem	S	55	Sil-U	Al-Z	17x6.50
Essex Terraplane 6	*Aut-L	—	Own	Ben	Own	——	S	Own ½	4.59	Sp	Ben	Mech	—	Gem	S	48	Tryon	Alem	16x6.00
Essex Terraplane 8	*Aut-L	—	Own	Ben	Own	——	S	Own ½	4.59	Sp	Ben	Mech	—	Gem	S	48	——	Al-Z	16x6.00
Ford A	*Aut-L	—	Long	No	Own	——	O	Own ¾	4.11	Sp	Own	Mech	—	Gem	S-Tr	44⅝	Own	Al-Z	18x5.25
Ford V-8	*Aut-L	—	Long	No	Own	——	O	Own ¾	4.11	Sp	Own	Mech	—	Gem	S-Tr	44	Own	Al-Z	18x5.25
Franklin Series 16	Del-R	B-S	Br-L	No	WG	WG	S	Own ½	4.73	Sp	Lock	Hyd	—	Gem	F	—	——	Al-Z	19x6.50
Franklin Series 17	Del-R	—	Long	No	WG	WG	S	Own ½	4.45	Sp	Lock	Hyd	—	Ross	S	60	Fafnir	Al-Z	17x7.50
Franklin Olympic Series 18	Del-R	B-S	Long	No	WG	WG	S	Own ½	4.30	Sp	Lock	Hyd	—	Ross	S	55	Tryon	Al-Z	17x6.00
Graham Standard Six	Del-R	—	Long	—	WG	WG	S	Sal ½	4.27	Sp	Lock	Hyd	——	Ross	S	54	ERS	Al-Z	17x5.50
Graham Stand.-Cust. Eight	Del-R	—	Long	—	WG	WG	S	Sal ½	4.27	Sp	Lock	Hyd	——	Ross	S	54	ERS	Al-Z	17x6.00
Hudson Super Six	*Aut-L	B-S	Own	†Ben	Own	WG	S	Own ½	4.64	Sp	Ben	Mech	——	Gem	S	54⅛	Own	Alem	18x5.25
Hudson Eight	Aut-L	B-S	Own	Ben	Own	WG	S	Own ½	4.64	Sp	Ben	Mech	VB	Gem	S	54⅛	Own	Alem	17x6.00
Hupmobile 321	*Aut-L	—	Borg	No	WG	WG	S	Sal ½	4.73	Hy	Mid	Mech	——	Ross	S	56	Sil-U	Al-Z	17x6.00
Hupmobile 322	*Aut-L	—	Borg	No	WG	WG	U	Own ½	4.36	Hy	Mid	Mech	——	Gem	S	57½	Rub	Al-Z	17x6.00
Hupmobile 326	*Aut-L	—	Long	No	DG	DG	U	Own ½	4.36	Hy	Mid	Mech	——	Gem	S	57½	Rub	Al-Z	17x6.50
La Salle V-8	Del-R	—	Own	†Ben•	Own	No	S	Own ¾	4.60	Sp	Own	Mech	VB	Sag	S	58	Own	Alem	17x7.00
Lincoln V-12	Aut-L	No	Long	No	Own	——	S	Tim F	4.23	Sp	Ben	Mech	VB	Gem	S	53	——	Alem	18x7.00
Lincoln V-12	Aut-L	No	Long	No	Own	Own	S	Tim F	4.90	Sp	Ben	Mech	VB	Gem	S	62	——	Alem	18x7.50
Marmon Sixteen	Del-R	—	Russ	No	Mun	No	S	Sal ½	4.27	Sp	Ben	Hyd	VB	Ross	S	59½	**	Al-Z	18x7.00
Nash Big Six	*Aut-L	B-S	Borg	No	Own	†DG	O	Own ½	4.70	Sp	Mid	Mech	——	Ross	S	54	Sil-U	Alem	17x5.50
Nash Standard Eight	*Aut-L	B-S	Borg	No	Own	DG	O	Own ½	4.44	Sp	Mid	Mech	——	Ross	S	54	Yes	Alem	17x5.50
Nash Special Eight	*Aut-L	B-S	Borg	No	Own	DG	O	Own ½	4.44	Sp	Mid	Mech	——	Ross	S	54	Rub	Alem	18x6.50
Nash Adv. Twin Ignition 8	*Aut-L	B-S	Borg	No	Own	DG	O	Own ½	4.71	Wo	Ben	Mech	——	Gem	S	55¾	Own	Bijur	17x6.50
Nash Am. Twin Ignition 8	*Aut-L	B-S	Borg	No	Own	DG	O	Own ½	4.50	Wo	Ben	Mech	——	Gem	S	57⅛	Own	Bijur	18x7.00
Oldsmobile Six	Del-R	No	Borg	†Ben	Own	None	—	Own ½	4.56	Sp	Ben	Mech	——	Sag	S	54½	Sil-U	Al-Z	17x5.50
Oldsmobile Eight	Del-R	—	Borg	†Ben	Own	None	S	Own ½	4.56	Sp	Ben	Mech	——	Sag	S	54½	Sil-U	Al-Z	17x6.00
Packard Eight	*Dyn	B-S	Long	Ben	Own	None	S	Own ½	4.36	Hy	Ben	Mech	VB	Own	S	56	Own	Bijur	17x7.00
Packard Super Eight	*Dyn	B-S	Long	Ben	Own	None	S	Own ½	4.69	Hy	Ben	Mech	VB	Own	S	60½	Own	Bijur	17x7.00
Packard Twelve	*Dyn	B-S	Long	Ben	Own	None	S	Own ½	4.69	Hy	Ben	Mech	VB	Gem	S	60½	Own	Bijur	17x7.50
Pierce-Arrow 836	*Del-R	B-S	Long	No	Own	WG	U	Own F	4.29	Wo	SW	Mech	SWM	Ross	S	60	Fafnir	Myers	17x7.00
Pierce-Arrow 1236	*Del-R	B-S	Long	No	Own	WG	U	Own F	4.43	Wo	SW	Mech	SWM	Ross	S	60	Fafnir	Myers	17x7.00
Pierce-Arrow 1242-7	*Del-R	B-S	Long	No	Own	WG	S	Own ½	4.58	Hy	SW	Mech	SWM	Ross	S	61	Fafnir	Myers	17x7.50
Plymouth Six	Del-R	—	Borg	†Ben	Own	NP	—	Own ½	4.38	Sp	Lock	Hyd	——	——	S	53	Sil-U	Al-Z	17x5.25
Pontiac Straight Eight	*Del-R	D-St	Own	No	Own	None	—	Own ½	4.44	Sp	Own	Mech	——	Sag	S	54	Rub	Al-Z	17x5.50
Reo Flying Cloud	*Del-R	—	Long	No	Own	Own	U	Own ½	4.30	Sp	Lock	Hyd	——	Ross	S	55⅛	Sil-U	Al-Z	17x6.00
Reo Royale	*Del-R	—	Long	No	Own	Own	O	Own ½	4.42	Sp	Lock	Hyd	——	Ross	S	57½	Own	Al-Z	18x6.50
Rockne Six	*Aut-L	B-S	Borg	No	WG	WG	M	Sal ½	4.55	Sp	Ben	Mech	——	Ross	S	54	Tryon	Al-Z	17x5.25
Studebaker Six	Del-R	B-S	Long	No	Own	Own	M	Own ½	4.36	Sp	Ben	Mech	VB	Ross	S	54	Fafnir	Al-Z	17x5.50
Studebaker Com. Eight	Del-R	B-S	Long	No	Own	Own	M	Own ½	4.36	Sp	Ben	Mech	VB	Ross	S	54	Fafnir	Al-Z	17x6.00
Studebaker President Eight	Del-R	B-S	Long	No	Own	Own	U	Own ½	4.31	Sp	Ben	Mech	VB	Ross	S	54	Fafnir	Al-Z	17x6.50
Studebaker President Eight	Del-R	B-S	Borg	No	Own	Own	U	Own ½	4.73	Sp	Ben	Mech	VB	Ross	S	60	Fafnir	Al-Z	17x7.00
Stutz LAA	*Del-R	D-St	Borg	No	Own	——	U	Sal ½	5.10	Wo	Lock	Hyd	VB	Gem	S	60	Own	Bijur	19x6.50
Stutz SV-16	*Del-R	D-St	Long	Ben	Own	——	M	Tim ½	4.75	Wo	Lock	Hyd	VB	Gem	S	62¾	Own	Bijur	*18x7.00
Stutz DV-32	*Del-R	D-St	Long	Ben	Own	——	M	Tim ½	4.50	Wo	Lock	Hyd	VB	Gem	S	62¾	Own	Bijur	*18x7.00
Willys 77	*Aut-L	—	Own	No	Own	——	U	Own ½	4.40	Sp	Ben	Mech	——	Sag	S	46	Tryon	Al-Z	17x5.00
Willys 99	*Aut-L	—	Own	No	Own	WG	U	Own ½	4.30	Sp	Ben	Mech	——	Gem	S	51	Tryon	Al-Z	17x5.50

KEY TO SYMBOLS AND ABBREVIATIONS

Weight—‖Austin standard 2 passenger coupe, †5 sedan with wire wheels. *Nash 5 passenger sedan on the 133-inch wheelbase weighs 4,350; on the 142-inch wheelbase 4,510. *Stutz D. V. 145-inch wheelbase weighs 5,352 pounds. ***Packard 8-cylinder 127½ in. wheelbase 5-passenger sedan weighs 4335. 136 in. wheelbase weighs 4590, Super Eight 138 in. wheelbase weighs 4815, 142 in. wheelbase 5 Club sedan weighs 4795; Packard 12-cylinder 142 in. wheelbase 5 sedan weighs 5385, 147 in. wheelbase 7 sedan 5600.

Wheelbase—O A, overall length.

Engine—Lyc, Lycoming Motors Corporation. ‖Floating power.

Cooling System—B & B, Bishop & Babcock; Dole, Dole Valve Company; Ful, Fulton Company; Har, Harrison Radiator Corporation; O-B, cooling by air, own automatic shutter; Th-Sy, Thermo-Syphon; Var, various makes.

Valve Arrangement—H, horizontal; L, L head; O, overhead.

Pistons (make or material)—Alum, aluminum alloy; *Alum, aluminum with invar struts; C I, cast iron; †C I, electroplated.

Oil Purifier—AC, AC Spark Plug Company; Cuno, Cuno Engineering Corporation; Han, Handy Cleaner Corporation; Pur, Purolator-Motor Improvements, Inc.; F, Float-O attachment, Taylor Sales Engineering Corporation.

Fuel Cleaner—AC, AC Spark Plug Company; Ste, Stewart Warner Corporation.

Air Cleaner—AC, AC Spark Plug Company; Bur, The Burgess Battery Company; Hol, Holley Carburetor Company; Mon, Monroe Auto Equipment Company; Un, United.

Carburetor—*B&B, Ball & Ball, designed by Chrysler and made by Carter Carburetor Company; Car, Carter Carburetor Company; DL, Detroit Lubricator Company; Mar, Marvel Carburetor Company; Str, Bendix Stromberg Carburetor Company; Til, Tillotson Mfg. Company; Zen, Zenith Detroit Company; *Equipped with automatic choke.

Carburetor Heat Control—Auto, automatic; Man, manual.

Front End Drive—Cel, Celeron; Link, Link Belt; Morse, Morse Chain Company; Tex, Textolite; Var-G, various gears.

Ignition System—Aut-L, Electric Auto Lite Company; Del-R, Delco Remy Corporation; Mal, Mallory Electric Company; NE, North East-Delco Appliance Corporation. *Twin ignition systems.

Generator and Starter—Aut-L, Electric Auto Lite Company; Del-R, Delco Remy Corporation; Dyn, Owen Dyneto Corperation. *Equipped with Bendix drive.

Automatic Starter—B-S, Bendix Startix; D-St, Delco Starterator. †B-S, Startix on Auburn custom and salon models only.

Clutch—Borg, Borg & Beck; Br-L, Brown-Lipe Gear Company; Long, Long Mfg. Company; Rock, Rockford Drilling Machine Company; Russ, Russell Mfg. Company.

Automatic Clutch Control—Ben, Bendix Brake Company. †Bendix optional at extra cost.

Transmission Make—*All 3 speed. All synchronized mesh. DG, Detroit Gear and Machine Company; WG, Warner Gear Company; Mun, Muncie Products.

Free Wheeling Make—LGS, LGS Mfg. Company; DG, Detroit Gear and Machine Company; WG, Warner Gear Company; NP, New Process Gear Company; †DG, optional at extra cost.

Universals—M, Mechanics Universal Joint Company; O, Own; S, Spicer Mfg. Company; U, Universal Products Company.

Rear Axle—Col, Columbia Axle Company; NP, New Process Gear Company; Sal, Salisbury Axle Company; Tim, Timken Detroit Axle Company; ½, semi-floating; ¾, three-quarter floating; F, full floating.

Type Final Drive—Hy, hypoid; Sp, spiral bevel; wo, worm.

Brakes Make—Ben, Bendix Brake Company; Lock, Lockheed Hydraulic Brake Company; Mid, Midland Steel Products Company; SW, Stewart Warner Corporation; Type—Hyd, hydraulic; Mech, mechanical. **Amplifier**—SWM, Stewart Warner mechanical; VB, vacuum booster.

Steering Gear Make—Gem, Gemmer Mfg. Company; Ross, Ross Gear and Tool Company; Sag, Saginaw Products Company.

Springs, Rear—Cant, cantilever; Cant-2, double cantilever; F, full-elliptic; S, semi-elliptic; S-Tr, semi-transverse.

Rear Shackles—Eat, Eaton Axle and Spring Company; Faf, Fafnir Bearing Company; Rub, Rubber Shock Insulator Company; Sil-U, Pressed Metals of America, Inc.; Tryon, Willys-Morrow Company. **Using both Fafnir and Rub.

Chassis Lubrication—Bijur Lubricating Corporation; Al-Z, Alemite Zerk, Alemite Mfg. Company; Alem, Alemite Mfg. Company; Myers, Myers Chassis Lubricating Company.

Tires—Stutz 145-inch wheelbase models have 20x7.00.

OPPOSITION TO TOLL ROADS IN NEW JERSEY BY MOTOR TRUCK CLUB

Newark, N. J., Jan. 31.—Three more organizations have gone on record in opposition to levying tolls on the viaduct between Newark and Jersey City. They are the Highway Transportation Conference, which successfully fought the signal device statute; the Motor Truck Club of New Jersey, and the Newark Farmers' Market, Inc., which operates the farmers' produce market at Chapel Street, adjacent to the viaduct.

In each case resolutions were passed condemning tolls as a detriment to the interests represented. These groups decided to urge their members to oppose any bill for such tolls that may be introduced into the Legislature.

These organizations, with the Ironbound Manufacturers' Association and the Newark Chamber of Commerce, which are also in opposition to tolls, are likely to form the nucleus for an organized campaign against legislation for viaduct fees.

Joseph A. Doyle, chairman of the legislative committee of the Ironbound Manufacturers' Association, is planning the legislative fight. The manufacturers' group has lodged a protest with Thomas H. MacDonald, chief of the Bureau of Public Roads, United States Department of Agriculture, against the transfer of Federal road funds from the viaduct.

"How detrimental tolls on the viaduct would be to Port Newark," Mr. Doyle said yesterday, "can be judged from the fact that last year 75,000 truck loads of material were moved out of Port Newark. Of this number, 40 per cent. went east through Hudson county and to the Westchester section of New York state. A toll charge added to the costs of this material would probably have lost the business to Port Newark."

JACKSON MICHIGAN DEALERS HOLD ELECTION

Detroit, Jan. 31.—Fred G. Pinkham, Jackson, Mich., automobile dealer, was elected president of the Michigan Automobile Trade Association at its annual convention here. He succeeds James M. O'Dea of Detroit.

Jerry De Nooyer of Battle Creek was named vice-president; James Dickson, Jr., Detroit, treasurer, and H. H. Shuart, Detroit, retained as secretary. District directors named included Lynn A. Wright, Jackson; John Hinga, Benton Harbor; Fred Striffler, Caro; Guy S. Garber, Saginaw, and Clyde M. Ford, Dearborn. Elected at directors-at-large were Ed S. Lunt, Flint; J. C. Decker, Hillsdale; Louis S. Schneider, Tecumseh; W. R. Foote, Traverse City; George Burke, Grayling, and Willard H. Johnson, Greenville.

FORD CHESTER PLANT CLOSED

Philadelphia, Jan. 31.—Approximately 1,400 workers at the assembly plant of the Ford Motor Company, Chester, Pa., did not return to work on January 27. "This plant is closed until further notice" read a poster on the plant gate.

Revised Schedule

1933 Bonus Distribution Issues of Automotive Daily News

Extra Distributions Total Over 500,000 Copies

Advertisers should consider that in addition to regular distributions, there are among the 260 issues of Automotive Daily News those scheduled below which receive added distributions. There must, however, be added to the schedule those issues which, on the occasion of new car announcements, are sent to all dealers handling the respective cars. This group of issues has a total distribution equal to the number of dealers and distributors in the country.

O—SALES ANALYSIS ISSUES: These issues, indicated by O below, will give not only the passenger car and truck registrations of month shown, but breakdowns for four previous years and other valuable breakdowns of registration figures.

Issues or Events	Date	Amount and Class of Distribution	No. of Issues
Annual New York Show Issues Annual Chicago Show Issues	January 7-14 January 28 to February 4	330,000 total for both shows. Extra distribution to vehicle dealers, jobbers, fleet owners, bus operators, factory executives, service stations, etc.	12
S. A. E. Annual Meeting	January 23-26	2,000 extra to engineers, production men, etc.	4
Truck and Bus O	February 10	December and year of 1932 commercial vehicle sales analysis issue. 16,000 extra to fleet owners, bus operators, truck dealers; also 1,500 jobbers.	1
C	February 17	December and year of 1932 passenger car sales analysis. 5,000 extra to car dealers.	1
Truck and Bus O	March 3	January commercial vehicle sales analysis issue. 16,000 extra to fleet owners, bus operators, truck dealers; also 1,500 jobbers.	1
O	March 7	January passenger car sales analysis. 5,000 extra to car dealers.	1
Truck and Bus O	April 7	February commercial vehicle sales analysis issue. 16,000 extra to fleet owners, bus operators, truck dealers; also 1,500 jobbers.	1
O	April 11	February passenger car sales analysis. 5,000 extra to car dealers.	1
Truck and Bus O	May 5	March commercial vehicle sales analysis and first quarter's sales analysis. 16,000 extra to fleet owners, bus operators, truck dealers; also 1,500 jobbers.	1
O	May 12	March passenger car sales analysis. 5,000 extra to car dealers.	1
Truck and Bus O	June 2	Commercial vehicle sales analysis for April, also first four months' analysis. 16,000 extra to fleet owners, bus operators, truck dealers; also 1,500 jobbers.	1
Annual S. A. E. Summer Meeting	June*	5,000 extra daily to engineers, production managers, plant superintendents, other factory executives. Also distribution at the meeting.	4
O	June 9	April passenger car sales analysis. 5,000 extra to car dealers.	1
O	July 5	May passenger car sales analysis. 5,000 extra to car dealers.	1
Truck and Bus O	July 7	May commercial vehicle sales analysis. 16,000 extra to fleet owners, bus operators, truck dealers; also 1,500 jobbers.	1
Truck and Bus O	August 4	June commercial vehicle sales analysis issue. 16,000 extra to fleet owners, bus operators, truck dealers. 1,500 jobbers.	1
O	August 8	June passenger car sales analysis. Also second quarter and half-year analysis. 5,000 extra to car dealers.	1
Annual Review and Reference Number	August 26	30,000 extra to engineers, production managers, jobbers, truck wholesalers and retailers, truck fleet owners, bus fleet operators, etc. Also 1,500 jobbers.	1
O	September 5	July passenger car sales analysis. 5,000 extra to car dealers.	1
Truck and Bus O	September 15	July commercial vehicle sales analysis. 16,000 extra to fleet owners, bus operators, truck dealers; also 1,500 jobbers.	1
O	October 3	August passenger car sales analysis. 5,000 extra to car dealers.	1
Truck and Bus O	October 6	August commercial vehicle sales analysis. 16,000 extra to fleet owners, bus operators, truck dealers; also 1,500 jobbers.	1
Truck and Bus O	November 3	September commercial vehicle sales analysis. 16,000 extra to fleet owners, bus operators, truck dealers; also 1,500 jobbers.	1
O	November 7	September passenger car sales analysis. 5,000 extra to car dealers.	1
Truck and Bus O	December 1	October commercial vehicle sales analysis. 16,000 extra to fleet owners, bus operators, truck dealers; also 1,500 jobbers.	1
Joint Show M. E. M. A. and N. S. P. A.	December*	3,000 extra daily to all accessory, parts and shop equipment wholesalers. Distribution at the shows and conventions.	5
O	December 5	October passenger car sales analysis. 5,000 extra to car dealers.	1

*Some exact dates not known at time of going to press

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